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BALTIMORE, FEBRUARY 8, 1906.

1904—BALTIMORE—1906.

Two years from the date of the great fire which swept the business section of Baltimore find 85 per cent. of the devastated area rebuilt and reoccupied or nearing rehabilitation. About \$20,000,000 represent the value of the new buildings in that area, and at least half as much has been spent upon building in other parts of the city, while more than \$150,000,000 additional represent the expenditures made or planned by individuals, public corporations and the municipality for the advancement of Baltimore consequent upon the fire. The people of the city, in addition to their own investments in building, trade and manufacturing, have authorized loans of \$10,000,000 for a modern sewerage system, \$6,000,000 for new docks, \$2,000,000 for Annex development, \$1,000,000 for park extension, and are ready, as soon as legislative sanction is given, to vote upon loans of \$5,000,000 for water-supply improvement, \$5,000,000 for street improvement, \$1,000,000 for fire department, \$1,000,000 for new school buildings and \$1,000,000 for park extension, a total of \$32,000,000 for special municipal improvements. Baltimore can congratulate itself upon its wonderful accomplishments within two years, and can point to them as a guarantee that it will keep up the pace with other leading cities of the United States.

United States Senator Arthur P. Gorman of Maryland writes from Washington to the MANUFACTURERS' RECORD as follows:

You are doing a great work for the country. Your recent article on the South has especially attracted a great deal of attention in

Congress and has created widespread interest in Southern development.

Advertisements of Southern localities offering special advantages for the location of manufacturing enterprises will be found on pages 62, 63 and 64.

DON'T CRIPPLE BALTIMORE.

Facing two years ago the immediate results of its fire catastrophe, Baltimore discovered that its charter was not effective in a municipal emergency; that limitations, wise enough, perhaps, under ordinary circumstances, could become hampering restrictions in case of untoward event. While legislation was being furthered to overcome the embarrassment of the time, there developed to some extent an agitation, born of a narrow spirit hardly native to Baltimore, seeking to prevent in a field utterly removed from the domain of legislation any men but Baltimoreans from participation in the rehabilitation of the "burned district." Fortunately, however, the progressive and liberal spirit of "Baltimoreans for Baltimore" prevailed over that of "Baltimore for Baltimoreans." Had that not happened we should not be able to speak today of the "rebuilt district," of the liberal provisions made already for municipal improvements, and of the plans for further liberality in the same direction. It is, therefore, exceedingly regrettable that the success of such plans should be menaced by attempts at legislation born of a spirit even narrower than that of "Baltimore for Baltimoreans," inasmuch as it seems capable of being expressed as "one class of Baltimoreans against Baltimore." The particular attempt at legislation, which would limit employment upon the great public works that are to be done within the next decade to registered voters of the city, is revealed as more and more ill-considered the longer it is studied. It seems the product of a state of mind which would preach slumber as the chief end of man. That state of mind fails to perceive that, should its attempt succeed, the completion of the vast improvements contemplated by Baltimore would be indefinitely postponed; that the burden of taxation, falling often most heavily upon the men least able to bear it, would be unnecessarily increased; that the very class supposed to be benefited by the special legislation would be the principal sufferers, and that the electorate of the city would be expanded so as to include most undesirable elements. Of greater moment, however, would be the blow that Baltimore itself as a whole would receive. The improvements are designed to make Baltimore a greater city, to attract outsiders to it, so that its wonderful potentialities in trade, commerce and manufacturing may be fully and rapidly realized. The proposed legislation, if ever enacted, would be in effect an announcement to the world that Baltimore would not welcome men from outside; that it proposed to lift itself by its own boot-

straps, a physical impossibility, and that therefore its street improvements were planned to prevent grass from being cultivated within the city limits, while its sewers and water-works were designed to encourage agricultural operations exclusively, in spite of the attempts to keep down planting in the streets. The proposed legislation would, if accomplished, put Baltimore to sleep for a century, and if it ever awoke, it would be to senile decay and feebleness.

SOUTH'S NEED OF WORKERS.

In various parts of the South reports of a shortage of household, farm and manufacturing labor continue. In Mississippi planters of the Delta and farmers in the hill counties are in sharp competition for help, inasmuch as the movement of negroes from the agricultural regions to the towns steadily progresses in spite of increased farm wages, so that it is claimed that not a county in the State has an abundant supply of workers. The cotton and cane fields of Louisiana are looking to immigration by way of New Orleans to meet the necessities long felt. State officials of Alabama have been trying to meet the demand for help. At Wilmington, N. C., all the labor available is employed and the architect of a \$250,000 plant nearby could find work for more than 125 laborers, but says that although he has had wide experience in construction work all over the country, from Maine to Mexico, he has never before experienced such difficulty in securing labor. In other parts of the State the scarcity is felt, and although the towns are absorbing country negroes, they have not yet their necessary quota. In Georgia there is similar trouble, planters complaining that because of the shortage they must turn out portions of their farm, and at the same time town dwellers being unable to get help for ordinary work about their lots.

Meanwhile some slight relief is had here and there through the incoming of foreigners. Scotch mechanics, learning about opportunities in Gadsden from a fellow-countryman who had lived there, have reached that city and have found steady work at good wages. Railroad construction in Georgia is being taken up by Italians, and fertilizer plants in two or three States are employing Italians and Hungarians. It is not possible for the negroes to be entirely dispensed with in many establishments, and the endeavor is made to separate them and the newly-arriving whites. Notwithstanding the discouragement because of the unreliability of a great bulk of negroes, Southern employers have in the main most friendly feelings for them, and will be among the first to note what should be the natural result of the incoming of white labor, the leading of the negroes into better industrial habits. The possibility of this is indicated in the experience of one of the group of Mississippi lumber mills which united in an effort to obtain white laborers from the North. This mill man-

aged to obtain nine men, three of whom have been found to be reasonably good and the other six splendid workers. Their coming has had an influence for good upon the remaining negroes, who seem to have been impressed with the fact that unless they endeavor to keep pace with the whites the time will not be far distant when they will be debarred from opportunity to work at all. The negroes of the South who get that fact well fixed in their minds and act wisely upon it will be the fortunate ones of their race.

SOUTHERN PIG-IRON.

In its issue of January 11 the MANUFACTURERS' RECORD published an estimate made early in December of 3,100,000 tons as the output of pig-iron in the South in 1905. How conservative the estimate was is indicated by the official figures of pig-iron production, in tons of 2240 pounds, set forth in the following table, which also gives a basis for comparison of the last five-year period:

States.	1901.	1905.
Alabama.....	1,225,212	1,694,062
Kentucky.....	68,462	63,735
Maryland.....	303,186	332,096
Tennessee.....	337,139	372,692
Virginia.....	448,662	510,210
West Virginia.....	166,597	298,179
Georgia.....	29,606	38,699
North Carolina.....		
Texas.....		
Total South.....	2,578,864	3,219,673
Total United States.....	15,878,354	22,992,380

These figures are compiled from the Bulletin of the American Iron and Steel Association, which publishes complete statistics of the production of pig-iron, Bessemer steel and all kinds of rails in the United States in 1905, extracts from which are published on another page of this week's issue of the MANUFACTURERS' RECORD.

CHANGES IN LOCOMOTION.

To a recent great race meeting in England between 800 and 1000 spectators were carried in about 400 automobiles. A close observer of the trend of things in that country based upon such an exhibit the prediction that the time is not far distant when what is known as first-class travel on the railways will be rivaled by automobile travel. There is no doubt that the automobile is revolutionizing modes of travel not only for pleasure, but for business, and is tending to supplant the horse vehicle for freight purposes. The last five years in this country have been marked by remarkable development in the industry of building automobiles for divers purposes, as is emphasized by letters published elsewhere in this issue of the MANUFACTURERS' RECORD from representative American manufacturers of automobiles. The part which this development is to have in transportation of the future is undoubtedly a great one, but its relations to other methods and older ones is still problematical. For, as the electric railway has to some extent become auxiliary and reinforcing to the steam road, so the automobile idea begins to crop out in long-distance railroading, as farseeing men seek to secure the maximum economy of fuel

In operating railroads. A mark of progress is the test made last week of a new gasoline electric car over the lines of the Delaware & Hudson Railroad in New York. This test is described elsewhere in the MANUFACTURERS' RECORD. The principle involved is the use of gasoline on the car in the development of electric motive power, and points to the electrification of railroads generally.

NO BRASS-BAND PHILANTHROPIST.

Public knowledge of Marshall Field's life has grown daily since his death, and with it has grown a public realization of the fact that it is possible for a rich man to enter the Kingdom of Heaven. Some few notoriously rich men of the world have so signally neglected their duties or abused their opportunities that a public opinion of narrow vision and shallow brain had begun to class all wealthy men with the unfortunate exceptions. Marshall Field's career, now becoming widely known, is calculated to correct such a false opinion and to emphasize the fact that entrance into the Kingdom all depends upon the man himself, and not upon his wealth; that it is not the mere possessing of wealth which may be his bane or his benefit, but rather the means of accumulating and the policy in the disposition of his wealth. He may have gained his money in a perfectly legitimate way and miss all the real advantage by improper use of it. He may have gained through wrong and be still further cursed by adopting at the eleventh hour improper methods in seeking to redress the wrong. In either event he misses here and hereafter the happiness that comes to thousands of men who, like Marshall Field, have made their money straight and who pass it on clean through their hands.

Among the notable traits of Marshall Field, though by no means monopolized by him, was one described through contrast by David Burnham of Lansing, Mich. Describing Mr. Field as a self-made man, who, beginning life poor, reached by his own ability, untiring energy and sterling honesty the height of fame in the mercantile world by fair and honorable methods, he writes to the *Wall Street Journal* as follows:

Unlike some of his contemporaries, Mr. Field did not seize a commodity that is a necessity in every household in the land and create a monopoly whereby hundreds of millions of dollars have been acquired, donate a hundred thousand or more to his church or a million to a sectarian school, and then grind the poor by raising the price of his article, or, by special legislation, get control of the greatest factor in the building and structural line in the entire world, and by this means amass so enormous a fortune that it would keep him busy in giving away the yearly income or to invest it in public institutions on conditions that the recipients pay 10 per cent. per annum on the amount. Mr. Field was a true philanthropist. When he gave money for a library, museum or public institution there was no string attached. He did not call on his neighbors to help. He endowed them. He was a quiet, serious, even-tempered, unostentatious man. He did not ask to have his good deeds proclaimed from housetops or advertised on street corners. He has given hundreds of thousands for charity that is not publicly known, but he never charged at the rate of 10 per cent. per annum for it. He was a captain of industry. His equal is not to be found in the mercantile world. This and future generations may never see his equal again. Marshall Field will, I believe, be engraved high on the temple of fame among the immortal names that were not born to die.

Mr. Burnham might have added that Mr. Field, unlike some of his contemporaries, did not surround himself with a lot of hirelings, posing before emotional women and hysterical men as

philanthropists, simply because they could mouth a lot of platitudes and common-places, or startle ignorance or enthusiastic absorption in superficials with their vast resources of misinformation in efforts to justify their employment by their overburdened and uneasy backers; that he did not set aside fortunes for the support of a host of social parasites never heard of as philanthropists until they scented some possibly available millions, either individual or contributed by many, and proposed to handle them upon a basis of "scientific charity," which principally means paying the salaries of the parasites, and that he was never known to use "philanthropy" as a cloak for advertisement of his business, of himself and of his cronies. No, there was nothing of that about Marshall Field. Nothing of the spectacular appealed to him. He was burdened with no suckers. He used no lightboxes and no brass bands to call attention to the good he was doing his fellow-men. He made his money honestly, he spent his money modestly and he gave his money modestly. His works do follow him.

HOLLANDERS FOR THE SOUTH.

The Rev. J. A. Mets of 1284 Amsterdam avenue, New York city, N. Y., writes to the MANUFACTURERS' RECORD that the article, "The South's Amazing Progress," published in the February issue of the *Review of Reviews*, "has reawakened a long-cherished desire in me to induce some of my countrymen, Hollanders, and as many as possible, to seek work and homes in the South, instead of, as thousands have done in the past, in the West and Northwest." He adds:

The one reason why this desire has not culminated in action has been lack of knowledge as to how to set about it as well as means to carry it out. Now, it has occurred to me that you might possibly know of some organizations in the South formed for the promotion of immigration to that wonderful section of our great country, and that you might be willing to give me the needed information to properly address them on the subject. You will doubtless agree with me that there are few nations that possess a more sober, intelligent and industrious population than the country of which the good Wilhelm is queen, and that artisans, farmers or laborers drawn from there would be a valuable acquisition to any section of the South where they could be employed.

The estimate by the Rev. Mr. Mets of the virtues of his countrymen is absolutely correct. The South has already among its population a few natives of Holland; too few, indeed, but not so few that they have not already demonstrated that they are a valuable, substantial addition to any community where they may cast their lot. Whether in their native land or in the country which they may adopt, they are notable for their thrift, their energy and intelligence and their ability to create garden spots. A few thousand of them could be spared by Holland, and, added to the population of the South, would give a great impulse to its material development.

It is almost needless to say that the MANUFACTURERS' RECORD has promptly directed the attention of the Rev. Mr. Mets to officials of the several Southern States vitally interested in immigration and to certain businesslike organizations actively at work to attract settlers. It is hoped that the various interests may find a practical outcome from correspondence with the Rev. Mr. Mets.

Mr. William B. Beamer, commercial agent of the Gulf, Colorado & Santa Fe Railway Co., Beaumont, Texas, writes

to the MANUFACTURERS' RECORD as follows:

The MANUFACTURERS' RECORD is certainly a wonder as an advertising medium. Our mail grows heavier each day with the perfect deluge of letters and catalogues from manufacturers in all parts of the United States.

ROANOKE.

In a review of the progress of Roanoke, Va., during the past year Mr. E. B. Jacobs, secretary of the Chamber of Commerce, shows in the *Roanoke Times* that building permits issued in 1905 were for 283 residences and 9 business houses, representing in all \$951,863, and he estimates that the actual cost of all buildings erected or in course of completion in that time will amount to \$1,250,000. He mentions specifically new undertakings and improvements of the year, and refers to the undertaking of the Roanoke Water-Power Co. on the Roanoke river, about four miles east of the city, to be ready to furnish electrical power about April 1, the contract for two additional yards and other improvements at a cost of \$800,000 by the Norfolk & Western Railway Co., the extensions of its Roanoke shops and the double-tracking of parts of its line, the construction work of the Tidewater Railway Co. east and west of the city and the authorization of an issue of \$400,000 worth of city bonds for extensive street and sewer improvements and an additional fire-engine station as promises of steady development in the future. Since 1901 the assessed values of property at Roanoke has increased from \$10,054,770 to \$14,616,967, and the population from 22,000 to 30,000.

AFRICA LOOMING INDUSTRIALLY.

There are indications that Africa is to be reckoned with more and more in estimates of future opportunities for world industrial development and of sources of industrial material. For example, enterprising Americans are reported by United States Consul Snodgrass of Pretoria as about to build an iron and steel mill at Zuurfontein, about midway between Pretoria and Johannesburg, on the South African Railroad, where a large ore bed has been purchased, which will be utilized providing the proper coking coal may be obtained. The plant will also use iron and steel scrap, it being estimated that the yearly accumulation of scrap in the Transvaal is almost sufficient to supply the requirements of the works, which will turn out bar iron, tees, girders, small mine rails, bolts and nuts, spikes, etc. Furthermore, investigation is being made of an oil field at Ermelo, on the east coast of Africa, and in that connection is suggested the building of a refinery at Delagoa Bay, to which the oil may be piped.

THE COTTON MOVEMENT.

In the first five months of the present cotton season, according to Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, the amount of cotton brought into sight was 7,907,596 bales, a decrease under the same period last year of 1,080,761 bales; the exports were 4,124,856 bales, a decrease of 1,043,073 bales; the takings were, by Northern spinners, 1,482,806 bales, an increase of 99,052; by Southern spinners, 1,152,881 bales, an increase of 30,834 bales.

FOR TEXAS.

The agricultural and statistical report for 1905 issued by Hon. W. J. Clay, commissioner of agriculture, insurance and history of Texas, while of special value to the agricultural interests of Texas immediately, will be found useful by every body seeking information about the industrial and agricultural opportunities of that great State. The greater part of the

volume is devoted to suggestive articles dealing with the manifold agricultural interests of Texas, telling what has been accomplished in that connection and what may still be accomplished. But another portion of it presents striking facts, largely for 1904, as to the production of Texas crops of various kinds, farm animals and products, the classes of soil, the mineral and timber resources, assessed values, etc.

A MITCHELL DIARY.

One of the most interesting publications issued by the University of North Carolina through the liberality of James Sprunt is James Sprunt Historical Monograph No. 6, being a diary of a geological tour in North Carolina in 1827 and 1828 by Dr. Elisha Mitchell, whose monument and tomb, Mt. Mitchell, is the highest peak in this country east of the Rocky mountains. In looking over hundreds of old families' letters Mrs. W. H. Coit of Statesville, N. C., a granddaughter of Dr. Mitchell, discovered a lot of letters written with care and method by Dr. Mitchell to his wife in his vacations of 1827 and 1828. They were, as he said, in the nature of a diary, and bore directly upon his tours, which were mainly through what are now the counties of Wayne, Onslow, Craven, Orange, Guilford, Surry, Wilkes, Ashe, Davidson, Rowan, Cabarrus, Mecklenburg, Lincoln and Rutherford, and they give a daily account of his journeys, with a mass of information about geography, geology and mineralogy, and of allusions to individuals, great and small, whom he met. The general assembly of North Carolina in 1822 appropriated \$250 a year for a geological and mineralogical survey of the State, and in 1826 continued the appropriation for one year longer. Prof. Denison Olmsted, then a professor in the University of North Carolina (afterwards of Yale), was appointed State geologist. On his resignation in 1825 Dr. Mitchell took his place. A report was printed, Parts I and II by Dr. Olmsted, Part III by Dr. Mitchell. In 1829 the latter made another short report. The general assembly declined to continue the survey, probably on account of the panic and consequent "hard times." The publication of these letters fills up to a certain extent the gap left by the discontinuance of the geological survey and gives an opportunity to Dr. Kemp P. Battle, the gifted editor of the Sprunt monographs, to give in many annotations another illustration of the zealous care which he is devoting to the writing of the history of his State.

CHANCES IN STENOGRAPHY.

Referring to a recent editorial in the MANUFACTURERS' RECORD, "Rambling Thoughts of Business Success," dealing with certain fundamental traits essential to genuine success in life, Mr. Stephen W. White, secretary of the Northern Central Railway Co., Philadelphia, Pa., writes as follows:

"I wish that the thoughts that you have incorporated in that article could be thoroughly drummed into the heads of every young beginner in business and professional pursuits. I have seen so much in my experience in life of the lack which you so thoroughly emphasize so justly."

In the editorial reference was made to stenographers, and in that connection it is interesting to note that Mr. White has recently published in pamphlet form a paper of his, "Shorthand in Its Historical and Practical Aspects," read before two branches of the Central High School of Philadelphia. His sketch of the history of shorthand gives some particulars of the notable contribution made by expertness in the phonographic art to the success of such men as First Vice-President John P. Green of the Pennsylvania Railroad, Presi-

dent William A. Patton of the New York, Philadelphia & Norfolk Railroad, Mr. John H. Converse of the Baldwin Locomotive Works, and mentions on the same line George B. Cortelyou, Judson Harmon, Daniel S. Lamont, George Hoadley, Frank S. Black, Frank A. Vanderlip and others. From his own rich and ripe experience Mr. White draws some exceedingly practical suggestions as to devotion to work, accuracy in it, ability to seize opportunity or to make it, and the necessity for treating shorthand as a profession in the ambition to make it an honorable stepping-stone to greater things.

LOUISIANA'S ROCK.

It all came about from a letter of Col. A. R. Blakely of the New St. Charles, New Orleans. Writing to the MANUFACTURERS' RECORD of the very promising outlook for every line of business in his section, he said:

"I doubt if even your imagination, endorsed by practical insight regarding the future of this section, is one-fifth of what the reality will be. The 'boom' is with us to stay, because it is being built on a solid rock foundation, even in a State where there is no rock at all."

In reply the following was written to Colonel Blakely:

"It is creditable to your practical-minded common-sense that, bounding along, as you are, upon the stream of development ever widening toward the ocean of Southern prosperity, you should, figuratively speaking, be feeling for a 'solid rock foundation.' But I am amazed that a man of your optimism and knowledge should assert that Louisiana is 'a State where there is no rock at all.' You ought not to be in such a hurry about Louisiana and her rocks. She is young yet. Just to think, she wasn't even in existence at the end of the Paleozoic age, and, being a child of the water, her growth has been naturally slow, but certainly sure. It has not been so slow, though, as to leave her rockless. I shall merely mention the selenitic and lignitic clays, rocks in process of formation, as it were, and the sulphur of Calcasieu, which is a fair sort of anchor for the State, even were the five islands of rock salt off the coast not sufficient to hold up New Orleans, should it ever take into its head to float off toward the Gulf. But what of the limestones and marbles at Winnfield, Coochie Brake, Bayou Chicot and other places in the State, some of which are already in use? I am afraid that you, together with other residents of New Orleans, are so busy piling up your 'rocks' in banks and safe deposit vaults or using them as fertilizer to induce greater productivity for Louisiana that you may be neglectful of the mighty rocks awaiting profitable exploitation."

In acknowledging this Colonel Blakely wrote:

"Knowing that you usually tell the truth, I presume all you say about Louisiana and the numerous minerals, etc., owned and possessed by her may all be true, but you can't prove it by me. I wasn't here at the time."

No, there is nothing of the Paleozoic about Colonel Blakely.

A fifty thousand club has been organized at Texarkana, Ark. and Texas, with Messrs. M. C. Wade, president; L. F. Black, first vice-president; Louis Heilbron, second vice-president, and R. L. Spencer, secretary and treasurer.

It is announced that the United States government will present its syrup experiment plant at Waycross to the Georgia Experiment Station if the officials of the station will agree to continue the operation of the plant.

GREAT STRIKES OF LEAD AND ZINC IN MISSOURI.

[Special Correspondence Manufacturers' Record.]

Carthage, Mo., February 2.

Zinc and lead mining in the great Southwest Missouri mining district, which furnishes 80 per cent. of the world's zinc, has recently received the impetus of its history. This district, which since the wild-cat days in the early eighties has continuously experienced a sane and steady development, is now just under the inspiration of the highest ore prices ever known. Whereas in 1896 ore sold at \$30 to \$35 a ton, in 1906 jack sells readily on a basis of \$50 a ton.

During the mild winter which is passing the output has been unusually large and conditions generally have conspired in unison to make a showing for the year just closed. Whereas again in 1904 the lead and zinc output of the mines in this district was 534,307,210 pounds of zinc and 68,669,230 pounds of lead, worth a total of \$11,479,940, the year 1905 has a record of \$3,000,000 in excess of the year before. This shows concisely and accurately what has been the development in the last 12 months.

The month of January, 1906, has witnessed a movement in prospecting and shaft-sinking which is beyond compare with either of the two years preceding. Within the month there has been opened up in this district phenomenal lead mines, two drill strikes capable of almost equal classification, and 50 or so others in the creditable class.

One lead mine as proved up is on the Walker property in the Duenweg district, south of Carthage and east of Joplin. The lease belongs to Chapman & Lennon, Webb City operators, who came into prominence as miners by virtue of this strike. On this lease within the last 10 days boulders of solid ore have been taken out weighing between 1500 and 2000 pounds each. The output of this property last week was 100,000 pounds. Nine drill holes have been put down on the lease, and a good run of ore was found in each of them. They now have three shafts down to ore level at 140 feet, and the fourth shaft is on the way down. The Walker tract adjoins the famous Log Cabin property.

Perhaps the most promising strike of zinc made in this district within the last few years has been made by the Trinity Zinc, Lead & Smelting Co. on what was formerly the Whitsett land, also in the Duenweg district, and adjoining the famous Porto Rico tract, which ranks among the first producers in the sheet-ground district. On its 120-acre field the Trinity Company has put down 18 drill holes, well distributed over the land, and each drill hole has struck pay dirt. From this indication it is practically proven that a rich sheet formation something over 20 feet in thickness underlies practically the entire 120 acres. The ore ranges in depth from 160 to 200 feet. Two shafts are now being put on the land, and these have proved up equal to the drill hole. The Trinity Company's land is surrounded by developed properties. The Porto Rico, on the east, has seven mills in operation, and the Maple Leaf, on the north, has long been a producer. On the west is the Coronation land, proved up with a shaft now being sunk. On the Criterion lease north and east there are two shafts being sunk upon drill holes showing as good as the Trinity property. On the south is the Baker land, which has also been developed since operations commenced on the Trinity land. With the exception of a space on the east, proved-up land surrounds the Trinity, and developments show a connecting link between the large sheet dis-

tricts, made up of Prosperity, North Carthage and North Webb City. This sheet district is conceded by practical miners who are acquainted with the different districts of the United States to be the largest body of sheet-zinc ground known in the world.

The third strike of remarkable proportions is that on the 25-acre lease known as the Stickney-Bailey lease, on Spring river west of Carthage. Six drill holes from 158 to 196 feet have passed through stuff 15 to 21 feet thick. The ore is all jack and of extra high grade. There is no lead in it. It will take care of four mill propositions.

The discovery of this property illustrates the luck of some men. The property is across the river from the famous Badger mines. Last summer, during the rampage of Spring river, the Badger mines were flooded. When the flood subsided and the water was pumped out of the Badger mine a cave-in occurred across the river on what is now the Stickney-Bailey land. One day a man passing the cave-in discovered some lead ore about 25 feet down. A drill was put to work and the ore struck at 160 feet, but there was no lead in it—pure jack. The land lies alongside the Peacock properties, one of the best producers in the district.

One element which within the last few years has contributed largely to increased output is the improved facilities for getting out the ore. At the present time there is not a camp in the entire district but has natural gas, and Carthage, Webb City, Duenweg and Joplin districts also have electric power. The big dam on Spring river at Lowell, Kan., owned by the Spring River Power Co., furnishes about one-fifth enough power to run all the mines in the district. It was reported here yesterday that an Eastern company was contemplating the installation of a big power plant on James river nearby.

It may be some occasion of surprise to the uninitiated to learn that three-fourths of the mineral output of this district belongs to one county in Missouri. In 1905 the mineral output of Jasper county, Missouri, was \$9,896,425. The geographical center of the district is Webb City and Carthage, which towns are separated only by the Frisco Railroad. To the east of this center is Carthage, the county-seat of Jasper county. To the west is Joplin, twice the size of Carthage, with a population of 30,000. Carthage is the home of the famous limestone quarries, which ship 2000 cars of sawed stone annually, and which is also known as the finest residence town in the West. It enjoys the distinction of having the lowest death-rate of any town of its class in the United States, according to the national bureau of vital statistics. It is the location of many "a house that Jack built," and Jack has built liberally of sawed stone.

To the eye which sees the zinc-mining country for the first time the sight is one of wonder and inspiration. The land is generally undulating prairie, with woods of black oak along the hills which border the streams. Wherever there is a mine there is a mountain of tailings; heaps of flint and limestone gravel, which glisten like diamonds on a sunlit day.

The real history of mining in this section dates from 1870, when E. R. Moffitt and John B. Sargent struck lead in Joplin Creek valley. In 1873, by accident, zinc was discovered. The district yields two kinds of zinc, sulphide of zinc or jack, as the miners know it, and silicate of zinc or calamine, which is used as a base for paint. The bulk of the mineral, however, in this

district is the jack. In 1873 jack sold for \$9 a ton. There was a gradual increase until 1890, when the price reached \$22. This was the zenith of the "boom days." Then came low prices, and the district went to smash. Zinc sold as low as \$15 a ton. Many fortunes were lost. Eastern capital withdrew, and Joplin, which flourishes today, became "the deserted village." Then came the time of the small local miner. Men who are millionaires in this district today were then prospectors with the pick and the shovel. By 1899 confidence was restored, jack attained a price of \$34, and there has been a steady average growth in this district ever since. Last winter a heavy snow retarded the output for five weeks. Buyers paid as high as \$60 for jack. The demand became suddenly increased, and within the past year the price has hovered near the \$50 basis.

And this is the cause of the unusual activity in the development of the Southwest Missouri lead and zinc-mining district. As long as prices are strong, so long will there be "phenomenal strikes" here. It is sometimes asked by strangers in this district, though these questions came more numerous before the recent developments, if there is any danger of the mineral playing out. The answer is this: There is one mining lot within sight of where I stand whose company's books show production of over \$1,650,300 worth of ore. The mining lot is 200 feet square, less than one acre.

ROY A. HOCKENSMITH.

THE MENIFEE GAS BELT.

Its Great Resources to Be Utilized in Central Kentucky.

[Special Cor. Manufacturers' Record.]

Lexington, Ky., February 3.

This week marked the beginning of the utilization of the immense natural-gas resources of Eastern Kentucky by the completion of the Central Kentucky Natural Gas Co.'s project—the construction of a 40-mile pipe line from Menifee county to this city and intermediate points—and the commercial use to which the natural-gas product will be put may in time revolutionize the manufacturing industry in this section. The product of the wells was turned on this week, and so great is the pressure that the gas is brought to this city without pumping, and this leads to the opinion that one of the richest natural-gas fields in the country has been tapped. Approximately \$1,000,000 has been expended in the venture. Forty miles of mains have been constructed in this city, and at Winchester and Mt. Sterling 16 miles of mains have been placed. In the near future extensions will be constructed to other points, and it will be but a few years until a large number of central Kentucky cities will be using natural gas.

The Menifee gas belt has been proven to extend over a wide area. Thirty-three thousand acres were developed by the Standard Oil Co. or its Kentucky branch, the New Domain Oil & Gas Co., and in the drilling and equipping of wells an immense amount of money has been expended. Nineteen excellent gasers have been drilled, and the limits of the belt, which extends into Wolfe county, have not yet been defined. All the wells have not been thoroughly tested, but a conservative estimate of the aggregate output is 14,000,000 cubic feet daily. This flow, it is estimated, will hold up for at least a generation without the addition of new wells, although drilling will be continued.

A minimum rate of 25 cents per 1000 feet has been established by the company, and this will make the product available for manufacturing purposes.

The development of the natural-gas resources of Kentucky has heretofore com-

manded little attention, although in all sections of the oil fields gas wells have been encountered. Capitalists have been a little cautious about the development of this product from a commercial standpoint, and immense gas wells in various sections of the State have been allowed to remain idle, owing to the limited knowledge as to their lasting qualities. However, the investment of \$1,000,000 in one field by conservative operators will have a tendency to show up the field as a whole in a favorable light, and it may be that the future will witness the establishment of gas belts in Kentucky as extensive as those of West Virginia.

Gas has been found in Kentucky from the Ohio river to the Tennessee border, and from the West Virginia border to Meade and Hancock counties on the west, an area embracing over two-thirds of the State. Several years ago a pipe line was constructed from the Meade county natural-gas belt to Louisville, and the wells of that county have maintained a gratifying production. In Eastern Kentucky a pipe line has been in operation from the Martin county gas belt to towns along the Big Sandy river for several years, and no signs of exhaustion have yet appeared. In Knox, Wolfe, Estill, Wayne, Clay, Fleming, Morgan, Lawrence and other counties many gasers have been drilled, but with the exception of Wolfe county the product of none of the wells has been utilized except for pumping oil wells and furnishing motive power for pipe-line stations. In Wolfe county the Campton Fuel & Light Co. has been supplying the town of Campton with natural gas for over a year.

W. S. HUDSON.

Louisiana Natural Gas.

[Special Cor. Manufacturers' Record.]
Shreveport, La., February 3.

A few days ago the seventh gas well was brought in by the Citizens' Oil & Pipe Line Co. at Ananias, La., 23 miles north of Shreveport. All of the wells are excellent producers. The same company has completed a pipe line from the field to this city, and a few nights ago a public demonstration was given at which gas was turned from the pipe and lighted. The demonstration proved the high pressure of the well. Small rocks which were in the pipe were blown a considerable distance from the end of the pipe when the pressure was turned on. The Shreveport Gas, Electric Light & Power Co. will distribute gas locally, and the concern now has a large force of men at work constructing a high-pressure belt line to encircle the city.

W. A. PAYNE.

NORTH CAROLINA BANKING.

Its Expansion Indicative of the State's Development.

At the annual banquet of the Chamber of Commerce of Wilmington, N. C., Mr. Charles N. Evans, president of the North Carolina Bankers' Association, and cashier of the Southern National Bank of Wilmington, in response to a toast, "Banking," set forth some interesting facts showing the wonderful progress made by the banking institutions of his State in recent years. He said that North Carolina is one of the few States in the Union which holds enough marketable bonds to liquidate its entire indebtedness, with something to spare, while its financial institutions are depending less upon bankers elsewhere. During the past five years, he said, an average of three banks a month have been organized in the State, and the farmers are rapidly learning to appreciate and to use the facilities safely and conveniently provided by the bank. He said:

"That illusive deposit which our bankers have vainly sought in the past—the trunk and stocking fund of the farmer—

is now coming to the fore and is aiding the circulation and assisting to enhance value. Let me say, parenthetically, that it is a full stocking, too, for the crops he formerly planted only for his own table use are now going in great abundance to the Northern markets and are yielding thousands upon thousands of dollars. The marketing of vegetables, fruits and melons alone yielded this section alone last season at least \$6,000,000. So it is that the North Carolina farmer of today is not only a depositor, but a bank president as well.

"The banking resources of Wilmington exceed those of any other city in the State by \$1,500,000. So important, indeed, had become the banking of Wilmington that on November 15 last we organized the Wilmington Clearing-House Association, in which the three national banks and four savings banks and trust companies are members. The association began operation December 1, and in the system of rotating adopted it became my duty to have charge of the exchanges for the month of January just ended. It will be interesting to you to know that during this month, consisting of only 25 business days, the total clearings between the three national banks (exclusive of any business of the savings banks or trust companies, whose checks were not included) amounted to \$2,270,690, or a daily average of \$90,827.60. This record is very satisfactory, yet when we look further and contrast the record of our State with the record shown only a few years back, it is a matter of greater pride."

In specification Mr. Evans showed that in 1892 the total deposits of all banks in the State were \$8,461,372, in 1900 they were \$16,594,270 and in 1904 they were \$32,117,813, while on May 1, 1905, there were 50 national banks with total resources of \$25,917,701, 163 State banks with \$20,860,501, 30 savings, loan and trust companies with \$9,628,660, and 14 savings banks with \$3,702,600—a grand total of resources of \$60,109,522. He estimated that the present resources of all the banks are at least \$65,000,000, and referring to the advance of State banks he said:

"These gains have been acquired from our own resources. North Carolina banks are not depositories for outside funds. On the contrary, they carry at least \$5,000,000 on deposit with Northern banks at 2 and 3 per cent. interest. Even the great government of the United States, to whom we pay large taxes and revenues, allows us at present only the pitiful sum of about \$300,000 of her deposit funds, and these are secured by United States bonds. Let us hope that this condition will not much longer prevail. North Carolina is destined to become the garden of supply to the Northern fruit markets, to say nothing of our other varied supplies, and is but a natural conclusion to anticipate greater recognition and greater assistance in the moving of our abundant crops."

A \$500,000 CEMENT PLANT.

Important Industry Contemplated for Birmingham.

Scarcely a week passes by but that some new and important manufacturing enterprise is planned for establishment in the Birmingham district. The past week has been no exception to the rule, the most important enterprise announced being a \$500,000 Portland cement plant, to represent eventually an investment of \$1,500,000, located at Leeds, 16 miles east of the city of Birmingham, Ala. Site has been purchased, surveys made for buildings, foundations are being laid and grading will begin next week. When the plant is ready for operation it will represent an initial investment of \$500,000, and about 200

men will be required to operate it. It is the intention of the promoters to steadily increase the capacity of the plant during the next several years to an ultimate daily output of 1800 barrels of American Portland cement. The country around Leeds is said to be fully adapted to the needs of the new enterprise, there being plenty of pure carbonate of lime, shale, coal and water available for economical manufacturing. The decision to establish this enterprise is one of many recent indications that the demand for Portland cement is necessitating a largely-increased output, and several plants of this character have been built in the South during the past several years. The Leeds plant will be owned and operated by the National Portland Cement Co., which is formed by an arrangement between the Carolina Portland Cement Co. of Charleston, S. C., and the Old Dominion Cement Co. of Staunton, Va. Mr. F. H. Lewis of the Staunton company and J. R. Hanahan of the Charleston company are actively engaged in completing plans for this big project.

SOUTHERN PROSPERITY.

Two Views from the Piedmont Section of Recent Advances.

William A. Garland, real-estate and investments, Hendersonville, N. C., writes to the MANUFACTURERS' RECORD as follows:

"I want to express my appreciation of your most excellent paper. The observant traveler in the South cannot fail to be impressed with the increased activity in every line of industrial development, no matter where he goes. The growth is marvelous in many sections. The lands are steadily improving in productiveness, the farmers have better stock, vehicles, farm implements, dwelling-houses, better clothing and live better; they have better schools and churches, better mail facilities, read more and, in fact, are doing better in every particular. The growth in our towns in some sections has to be seen to be appreciated. It is simply beyond comprehension to those who have not watched it for the last five years. The travel and traffic on our railroads has almost doubled in two years. Almost all of our passenger trains are crowded all the time and carry from one to three more coaches than two years ago, when they were seldom crowded. Many of them are running twice as many trains per day as they did two years ago. The fact is we are in an era of prosperity and growth such as has never before been seen in our section.

"Good crops and good prices have caused some of it, but your paper has done much of it by its constant and unswerving belief in our possibilities and by keeping them constantly before the people who were looking out for opportunities. When the value of our products and resources were depressed you never wavered in your belief nor in your untiring effort to make other people see the bright side. I regard your paper as the best publication of all for those who want to keep informed of our growth and development and opportunities. I have been making a scrapbook of clippings from your paper, and sometimes when I get through clipping there is not much left. I don't see how I could get on without it."

J. W. Connelly, real estate and lumber, Nichols, S. C., writes to the MANUFACTURERS' RECORD:

"There has been much written recently regarding the South, its wonderful growth, prosperity, resources and development, but the half has not been told. When we of the South who have been eyewitnesses for 25 years or more to the wonderful changes wrought here, the increased

activity in the manufacturing of iron, coal, cotton and cottonseed products, lumber and numerous other branches of manufacturing, the broad expansion and phenomenal growth and prosperity of banking and mercantile institutions, the improved methods of farming and unprecedented demand for all farm products during the last five years, surely we are led to exclaim, 'this is the land of promise, hope and prosperity.' Holding, as it does, the monopoly of the world's production of raw cotton, leading in iron, coal and many classes of timber, it is destined to be in the near future one of the richest, most prosperous and highly blest of the world.

"In no section of the world, perhaps, have values of farming, timber, coal and iron and petroleum lands so steadily and rapidly advanced. New mines and industries have been exploited and opened up, raw sections of great and inestimable value, such as timber, coal, coke, iron, etc., have been traversed by new lines of railway, thus bringing them into public favor and making their vast resources available. The tide of the world is turned Southward, and many superior advantages in climate, resources, moral, intellectual and religious growth and general prosperity justify it.

"Here the pessimist will find a cure for his ills; the laggard energy, ambition and determination for his further endeavor; the investor, capitalist and manufacturer a rich and inviting field for exploit and handsome profit in any and all lines—a land where failure, misery, want and suffering are unknown; where the trees are budding and the flowers bloom evermore.

"We say to those who are friendly to the South and its interests, come and enjoy its bountiful fruits, aid in its upbuilding and its prosperity. Its growth and prosperity during 1905 have been phenomenal, and better things are promised for the near future. The sun of its prosperity has only appeared upon its horizon. What of its future?"

FLORENCE WAGON WORKS.

The Annual Output to Be Increased Fifty Per Cent.

[Special Cor. Manufacturers' Record.]
Florence, Ala., February 1.

A deal was consummated today whereby the Florence Wagon Works changed hands, a number of Tennessee financiers getting control of the same, among them A. H. Robinson, vice-president of the American National Bank of Nashville; Johnson Bransford, president of one of the land companies of Nashville; John W. Fry, president of the Farmers and Merchants' Bank of Columbia and of the Lynville Bank; Geo. W. Killebrew, general manager of the Bluegrass Phosphate Co. of Mt. Pleasant; W. R. Cole, president of the Napier Iron Works of Nashville and Napier; Lee Ashcraft, general manager of the Tennessee Valley Fertilizer Co. of Florence, and others. There will be brought into the company an additional amount of capital, some \$100,000. John T. Ashcraft was elected president, and Edward Linn, secretary.

The Florence Wagon Works is one of the most prosperous industrial institutions of the South. The object of the new management will be to increase the output from 12,000 wagons annually to 18,000. They build all kinds of farm wagons, which the company has brought to almost scientific perfection. No change is contemplated in the office force. Dr. A. D. Bellamy, who founded the industry, will remain with the company as general manager and give his personal attention to the operation of the plant, which has grown to its present proportions under his skillful management. The deal was concluded by Messrs. John T. and Lee Ashcraft, both

of whom are young business men of this city of sterling worth and high character, who have been associated with some of the most successful enterprises we have in the city. Mr. John T. Ashcraft, the newly-elected president, has been a director and attorney for this company for a number of years. THURSTON H. ALLEN.

22,992,380 TONS OF PIG-IRON.

The Record Output in the History of This Country.

The United States made in 1905 its highest record as a pig-iron producer, the output being nearly 23,000,000 tons of 2240 pounds each. The American Iron and Steel Association has received from the manufacturers directly complete statistics of the production of all kinds of pig-iron during the year, and in its bulletin publishes detailed statistics. In its summary it says:

"The total production of all kinds of pig-iron in 1905 was 22,992,380 gross tons, against 16,497,033 tons in 1904, 18,009,252 tons in 1903 and 17,821,307 tons in 1902. The following table gives the half-yearly production in the last four years in gross tons:

Periods.	1902.	1903.	1904.	1905.
1st half	8,808,574	9,707,367	8,173,438	11,163,175
2d half	9,012,733	8,301,885	8,323,595	11,829,205
Total...	17,821,307	18,009,252	16,497,033	22,992,380

"The production of 1905 was not only much the largest in our history, but it exceeded that of 1904 by 6,495,347 tons, or over 39 per cent. The year of next largest production was 1903, when 18,009,252 tons were made. The increase in production in 1905 over 1903 was 4,983,128 tons, or over 27 per cent. The production in the second half of 1905 was 666,030 tons more than that of the first half.

"The production of Bessemer and low-phosphorus pig-iron in 1905 was 12,407,116 tons, against 9,098,659 tons in 1904, an increase of 3,308,457 tons, or over 36 per cent. In the first half of 1905 the production was 5,985,148 tons, as compared with 6,421,968 tons in the second half. The production of low-phosphorus pig-iron alone in 1905 amounted to 186,907 tons, against 190,946 tons in 1904.

"The production of basic pig-iron in 1905, not including charcoal of basic quality, was 4,105,179 tons, against 2,483,104 tons in 1904, an increase of 1,622,075 tons, or over 65 per cent.

"The production of charcoal pig-iron in 1905 was 352,928 tons, against 337,529 tons in 1904, 504,757 tons in 1903 and 378,504 tons in 1902. The production in 1905 was 15,829 tons less than in 1903 and 25,576 tons less than in 1902. In the first half of 1905 the production was 170,512 tons, and in the second half it was 182,416 tons.

"The production of spiegeleisen and ferro-manganese in 1905 was 289,983 tons, against 219,446 tons in 1904, an increase of 70,537 tons. The production of ferro-manganese alone in 1905 was 62,186 tons, against 57,076 tons in 1904.

"One company produced 1243 tons of ferro-phosphorus in 1905, against a similar production of 946 tons in 1904. Another company reported a production of 2750 tons of ferro-Bessemer in 1905, but did not report any iron of this grade in 1904. These figures are not included in the spiegeleisen and ferro-manganese reported above.

"The whole number of furnaces in blast on December 31, 1905, was 313, against 294 on June 30, 1905, and 261 on December 31, 1904. The number of furnaces in blast at the end of 1905 was larger than at the close of any year since 1891, when exactly the same number of furnaces were active.

"The number of furnaces actually in blast in the second half of 1905 was 349, as compared with 334 in the first half. In 1904 the number in blast during the last half of the year was 297, against 295 in the first half.

"On December 31, 1905, there were 17 furnaces in course of erection and 3 furnaces were being rebuilt. Of the building furnaces 2 were located in New York, 4 were in Pennsylvania, 1 was in Tennessee, 2 were in Alabama, 3 were in Ohio, 2 were in Illinois, 1 was in Michigan, 1 was in Wisconsin and 1 was in Colorado. With the exception of the Michigan furnace, all of these furnaces when completed will use coke or mixed anthracite coal and coke for fuel. The Michigan furnace will use charcoal. Of the 3 rebuilding furnaces 1 was in Pennsylvania, 1 was in Kentucky and 1 was in Ohio. When rebuilt all 3 furnaces will use mineral fuel."

The following tables are of value for purposes of comparison:

Total Production of Pig-Iron.					
States.	In blast June 30, 1905.			Production of 2240 pounds.	
	In.	Out.	Total.	First half of 1905.	Second half of 1905.
Mass.....	1	1	2	7,636	8,351
Conn.....	1	1	2	559,208	647,860
N. Y.....	13	14	27	165,991	145,048
N. J.....	6	6	12	5,226,691	5,352,436
Pa.....	124	126	250	156,334	175,762
Md.....	3	4	7	240,672	269,538
Va.....	15	14	29	1	1
N. C.....	1	1	2	25,752	12,947
Ga.....	1	3	4	743,547	860,515
Texas.....	1	1	2	149,016	149,163
Ala.....	29	29	58	32,793	30,942
W. Va.....	2	4	6	195,757	176,935
S. Y.....	3	5	8	2,181,058	2,405,052
Penn.....	15	12	27	979,157	1,055,326
Ohio.....	42	55	97	147,953	140,751
Ill.....	19	17	36	184,234	167,181
Mich.....	9	2	11	176,376	231,398
Wis.....	6	6	12	1	1
Minn.....	1	1	2	1	1
Mo.....	1	2	3	1	1
Col.....	3	4	7	1	1
Ore.....	1	1	2	1	1
Wash.....	1	1	2	1	1
Total, 1905.	294	313	607	11,163,175	11,829,205
Total, 1904.	216	261	477	8,173,438	8,323,595

Production of All Kinds of Pig-Iron, 1902 to 1905.				
States.	1902.	1903.	1904.	1905.
Mass.....	3,360	3,265	3,149	15,987
Conn.....	12,986	14,501	8,922	15,987
N. Y.....	401,389	552,917	606,799	1,198,068
N. J.....	191,280	211,967	262,394	311,039
Pa.....	8,117,800	8,211,590	7,644,321	10,579,127
Md.....	303,229	324,570	293,441	332,096
Va.....	537,216	544,034	310,526	510,219
N. C.....	35,410	87,255	75,686	38,699
Ga.....	1,472,211	1,561,398	1,453,513	1,604,062
Texas.....	183,096	199,013	270,945	298,179
Ala.....	110,725	102,441	47,106	63,735
Ky.....	392,773	413,388	392,096	374,692
Ohio.....	3,631,388	3,287,434	2,977,929	4,586,110
Ill.....	1,730,220	1,692,375	1,655,991	2,094,483
Mich.....	155,213	244,709	233,225	288,704
Wis.....	273,987	283,516	210,404	351,415
Minn.....	269,930	270,289	151,776	407,774
Mo.....				
Col.....				
Wash.....				
Total...	17,821,307	18,009,252	16,497,033	22,992,380

The production of all kinds of rails in the United States in 1905 amounted to 3,372,257 gross tons, against 2,284,711 tons in 1904, an increase of 1,087,546 tons, or 47.6 per cent. The maximum production was reached in 1905.

Twenty-four plants in 12 States rolled or rerolled rails in 1905, as follows: New York, 1; Pennsylvania, 5; Maryland, 3; West Virginia, 1; Georgia, 1; Alabama, 3; Ohio, 4; Illinois, 2; Wisconsin, 1; Colorado, 1; Washington, 1, and California, 1. The production of Bessemer steel rails in 1905 amounted to 3,188,675 gross tons, against 2,137,957 tons in 1904, an increase of 1,050,718 tons, or over 49 per cent.

The Montgomery (Ala.) Commercial and Industrial Association, which is to be known hereafter as the Commercial Club, has elected Messrs. A. G. Forbes, president; F. P. Chaffee, Frank P. Glass and Alexander Rice, vice-presidents, and Hardwick Ruth, J. C. Haas, G. W. Ellis, M. B. Holt, W. E. Davidson, G. A. Thomas, C. G. Zirkle, J. M. Falkner and G. W. Barnett, directors. Mr. L. L. Gilbert is the efficient secretary of the organization.

Diversified Industries in the Wheeling District.

[Special Correspondence Manufacturers' Record.]

Wheeling, W. Va., February 5.

There seems to be no end to surprises in this "Little Mountain State"—"little," so-called, although in area its square miles considerably exceed those of Massachusetts, Vermont, Rhode Island and Connecticut combined, while in wealth of coal, oil, gas and timber it is the biggest proposition as to aggregate natural resources that the broad Union can today produce. This in itself is a surprise to those who have never had their attention directed to the remarkable conditions existing here, and when one has once begun to investigate West Virginia and to find how much there is of potentialities here there is further surprise that the world so "little heeds or long remembers," if it knows, the opportunities presented here for an industrial development of the most varied and important kind. On anyone who has at all studied conditions and tendencies here the conclusion is forced inevitably that West Virginia is to see a development well-nigh identical with that which has made of Pennsylvania the greatest industrial State in the Union, and that the immediate years are to bring such a transformation to West Virginia as will surprise not only the outside world, but West Virginians as well.

In this belief no people are more strongly grounded than Pennsylvanians themselves, for they are to be found everywhere in West Virginia development work today. They know and appreciate West Virginia as almost no other peoples can. They have seen how coal, oil, gas and timber may furnish the foundation for industrial enterprise of a gigantic sort, and they recognize on sight the promises West Virginia contains for vast activity in widely-diversified lines.

I have had occasion to make comment that in West Virginia, as a rule, I find lack of disposition, among native people generally to give serious and earnest attention to what may be called refined manufactures, for the reason that primitive conditions have made it possible for great fortunes to be accumulated in the elemental pursuits of land speculation and the marketing of fuel and raw or semiraw materials. This condition, of course, cannot indefinitely endure, any more than speculation in town lots can continue without ending. The limit of advancement in values is reached some time, and the necessity for manufacturing that may go on from generation to generation, increasing in volume as the years go by, then presents itself as a factor vital to further progress.

Here in Wheeling surprise is inevitable that in so large a degree conditions are found to be entirely different from those just described. That from the earliest times Wheeling has been a center of iron and glass manufacture is a matter of quite common knowledge, but that it is so important an industrial center in so wide a variety of lines few people anywhere have any conception of. How many men, think you, are aware that the iron and steel mills of what is very properly called the Wheeling district have a daily capacity of product worth from \$275,000 to \$300,000, with daily pay-rolls running to almost \$100,000? While this as a showing falls far behind the figures the Pittsburgh district announces, to be sure, yet the estimated annual totals of \$80,000,000 to \$100,000,000 in the one item of iron and steel products give the Wheeling district rank as an iron and steel center of the most important class. What is called the Wheeling district includes the group of cities and villages on either side of the

Ohio river reaching from Steubenville to Moundsville, a distance of 40 miles. While the United States Steel Co. now owns a number of the plants in this district, yet they were started by Wheeling men and Wheeling money, and about the only exceptions to this rule are cases where Pittsburgh men, as at Follensbee, have come over to establish a new plant and a better one than was possible at the old location. All the cities of the Wheeling district are made tributary to Wheeling through a network of trolley lines, and the cities and their industries are as much a part of the central city as though they were located within the borders of its municipal lines. Even in cases where the trust has acquired properties, and also in the plants outside of Wheeling proper, Wheeling men are in charge as managers and superintendents almost without exception, so that the iron and steel development of the district may justly be ascribed to the skill and enterprise of men of Wheeling.

Here are a number of large tinplate, sheet-steel and tube works whose product finds a market everywhere. Here are bridge works which supply railroads as wide apart as Maine and Alabama. Here are architectural iron works whose product has even gone into skyscrapers in Pittsburgh, and Wheeling castings will supply a third of all the huge casings used by the Pennsylvania Railroad for its tunnels underneath the Hudson and the East rivers. Wheeling galvanized-steel sheets go from here the country over, and stamped-steel ceilings, invented here, are made for a widely-scattered market.

Distinct from these industries, and not included in the totals given, are such plants as tool works, in which miners' picks are made for the miners of Colorado, California, Alaska, Mexico and Australia, and Wheeling picks have also been sent to Panama to help make the "dirt fly" whenever that time may come.

Then there are numerous unique industries, such as lamp and lantern factories, whose product goes all over this country and to the furthestmost parts of the earth. Screw caps for catsup and other bottles are made here, and there are numerous other industries which owe their origin and success not to peculiarly advantageous location, but solely to the enterprise, ingenuity and managerial ability of the men who started or today conduct them. Of this sort are the potteries, in the various branches of which are made fine tableware, rivaling the best French make; sanitary goods—plumbers' supplies, bathtubs, etc. Also belonging to this category are the famous calico print works of Wheeling, now in the very successful hands of the second generation from the founder of the business.

Then there are the numerous and various glass factories of the district, which turn out an almost infinite variety of articles, from window panes to fine tableware and novelties, such as glass letters, prisms, etc. Wheeling always has been a glass-making center, and although the cheap gas of the Indiana gas belt drew off some plants for a time, the industry is rapidly increasing now, and one of the largest and most important plants in the entire district is one that has only recently been completed.

Wheeling has one of the largest tobacco factories in the world, and in Wheeling was invented the odd cigar, the stogie, of which there are made in Wheeling today more than 100,000,000 in a year. About \$1,000,000 is paid the government for revenue stamps each year in Wheeling,

which represents the tobacco and brewing interests, the greater portion being tobacco stamps.

Another industry not dependent on location and mainly successful through managerial ability is that of paper-sack manufacture. At the city of Wellsburg, in the Wheeling district, there is a factory which supplies practically all the flour sacks that are used by the great Pillsbury flouring mills of Minneapolis, and another paper mill there makes cement sacks and manila wrapping paper.

This partial list, or rather hint, of the industries in the Wheeling district will indicate to some extent how surprising is the development that has occurred in this West Virginia city, and will show what a firm foothold the habit of industrial activity has gained among the people here. That is the great point. Let the minds of the people in any community be once earnestly fixed on industrial development, and there will be started in motion an activity that will grow with each turn like the rolled snowball. What has been done in Wheeling can in a measure be accomplished in a half-dozen or more places in West Virginia. Not that I would say any city in the State is likely to overhaul and leave behind this city and its environs, for that I can hardly believe. There is inherited and accumulated managerial ability at the head of the industries here; there is the courage and audacity that come with successful endeavor; there is skilled labor in abundance, and there is much advantage in the early start and in the momentum that has been gained. Wheeling seems unquestionably destined to grow much greater industrially, and even Pittsburgers themselves hail her as a sort of understudy, but for the rest of West Virginia Wheeling should be an inspiration, as she has so clearly shown how much may be done with determination of the proper sort.

There are numerous individual illustrations of the achievement here which it may be profitable to know something about, and with the idea that a study of examples may prove instructive as well as interesting, I will cite occasional instances now and in further letters from Wheeling. One of the conspicuously successful enterprises here is that of the Wheeling Mold & Foundry Co. This is the Wheeling company that secured so large a part of the contract for casings for the North and East river tunnels of the Pennsylvania Railroad. The contract was secured through competitive bids, and it was a revelation to the New York contractors that a Wheeling plant was able to undertake a job of such magnitude; in fact, it required a regular campaign of education to convince the New Yorkers that the work could be done here at all. The amount of iron required to complete this contract is about 70,000 tons. The company has been at work a year on the job, and it will take two more years to finish it. Specially designed planers and other machine tools were required to do the work, all of the most massive character, as the castings, in segments of a circle, weigh about a ton each.

The specialty of this plant is chilled and sand rolls, rolling-mill machinery and ingot molds. In addition to the Pennsylvania work, the company has good-sized contracts with the National Tube Co. and the Carnegie Steel plant. The product, in fact, is sold all over the United States between New York and San Francisco, and in England, Germany, and even Australia. Last year about \$800,000 worth of business was done by this plant, and all this development has come about in 15 years, and with local men and local money. The business was started in 1900 in Wellsburg, and was removed to Wheeling in 1901.

The first shop was 15x30 feet in size, and was exclusively devoted to the making of glass machinery. Some six years ago the company built what are now known as the Manchester works of the company, where there are still made brass castings, glass machinery and cut gears. Four years ago the new plant, called the Peninsula works, was constructed. On a four-acre plot in East Wheeling a modern shop 500 feet long by 110 feet wide has been erected, and here is one of the best-equipped plants in the United States; in fact, there is none better, so far as it goes. The foundry has four stacks with a combined capacity of 125 tons of iron a day; there are three electric traveling cranes in the foundry of 5, 10 and 20 tons capacity, and two of 10 and 20 tons in the machine shop, and everything throughout is in accordance with the best modern machine-shop practice.

From 350 to 400 men are employed at this plant. The company is capitalized at \$300,000. The president is C. E. Blue; vice-president and sales manager for the Pittsburg district, L. V. Blue; secretary,

H. S. Bradley; Eastern sales agent, F. F. Vandevort, 71 Broadway, New York.

In discussing the development of this business and the growth of the Wheeling iron and steel industry, President Blue said to me:

"We are practically in the Pittsburg district here, having the same freight rates and getting our pig-iron at the same price as Pittsburg does. Connellsville coke may be a trifle higher here, but West Virginia coke is cheaper. Small differences in freight rates, however, don't cut much figure, as they can easily be overcome by skill and economies in management. Where railroad facilities are all right a successful industry can be built up anywhere in the Ohio valley between Pittsburg and Cincinnati.

"We have the advantage over Pittsburg of being closer to the natural gas fields, and as I said to the skeptical New Yorkers who wanted to know of me what our company would do if natural gas played out, 'our two plants are half a mile apart, and there is a coal mine between them.'"

ALBERT PHENIS.

FLYWHEEL ACCIDENTS.

By A. ST. C. DUNSTAN, M. E., C. E., Auburn, Ala.

[Written for the Manufacturers' Record.]

Among the ills to which power-plant machinery is heir to, none has attracted more attention than the bursting flywheel, not only on account of its frequency of occurrence, but on account of its spectacular results. When a 60-ton mass of cast iron running at a peripheral speed of from 5000 to 6000 feet per minute lets go and distributes itself impartially in all directions in a vertical plane, the results are bound to be striking. By the bursting of a wheel of this character approximately 10,000,000 foot-pounds of destructive energy are set free, and the effects are naturally calamitous. Loss of life, wrecked and ruined buildings and loss of income both to owners and employees during the time required for restoration are the consequences of such an accident.

Regarding the frequency of such accidents it is necessary only to call attention to the fact that it is difficult to read any number of a mechanical paper giving the news from power plants without finding therein accounts of from one to six such occurrences.

How many accidents of this kind are averted only by the prompt action of the attendants and by the merest good luck it is impossible to say, but the number is doubtless larger than one would imagine.

Since this accident is so common and so disastrous in its results, a discussion in a general manner of its causes and possible methods of prevention should be of interest to all who have interests in such plants.

The same grave remark which declares that a boiler bursts because it is not strong enough to hold the pressure upon it is perfectly applicable to the flywheel. It goes to pieces, bursts or explodes because its resistance is not equal to the forces acting upon it.

A flywheel is a somewhat complicated structure which is subject to the action of a much more complicated system of forces. Some of these forces are easily calculated and allowed for; others are entirely intractable, and their existence in the case of a given wheel may be entirely unsuspected.

If the case of an ideal wheel, consisting of a rim alone without joints and without arms, and of perfectly uniform density and strength, is considered, it is evident that every cubic inch of the rim will be subject to a certain centrifugal force acting radially outward. The rim of the

wheel will stretch until the elastic forces developed by such stretching are sufficient to counterbalance the centrifugal forces. A change of speed will change the amount of the centrifugal force and the wheel will again change its size until the elastic forces are sufficient to counterbalance the new value of the centrifugal force. It should be noted that the centrifugal force varies as the square of the peripheral speed; hence doubling the speed of the wheel will increase the centrifugal force four times. If a wheel is designed with a factor of safety of four for a given speed, doubling the speed will at once reduce this factor of safety to one and the wheel will be on the point of going to pieces.

If a set of arms is applied to this imaginary rim things immediately become much more complicated. The points where the arms are attached to the rim are not so free to move outwards as before, the arms acting as tie-rods to hold these points at a more or less invariable distance from the axis of the wheel. The points on the rim midway between the arms are nearly as free to move as before. The wheel no longer tends to keep a true circular shape, all points contracting or expanding the same amount, but the portions of the rim between the arms expand or contract more than the parts attached immediately to the arms. During one revolution of an engine flywheel the speed is twice increased and twice diminished, resulting in a constant expansion and contraction of those parts of the wheel which are free to move. This expansion is necessarily small, but it exists nevertheless, and the net result of the whole process is that there is a peculiar racking action on rim, arms and hub. If in addition the wheel has a belt running on it, the effect of belt tension, jerks due to varying load, etc., are all superposed on the forces already mentioned, and the result even in this ideal case is complicated to an extreme degree. The actual case is even worse than the foregoing would indicate, for, in addition to all the forces considered, there is the effect of unequal density, unequal strength in different parts, and the ever-present bugbear of casting strains in the iron itself. From their nature it is evident that these casting strains are not amenable to any process of calculation, and the best the builder can do is to make his castings of such simple symmetrical shape that the chance of these

strains existing is reduced to a minimum. This consideration leads to the construction of segmental wheels, in which the wheel is built up of simple segments cast separately. These segments are held together either by bolts or by arrow-headed or elliptical wrought-iron links shrunk into place. The designer is here between the devil and the deep sea; he builds segmental wheels to avoid casting strains, but the joints thereby introduced add a few little troubles and complications of their own.

In view of the foregoing, is it any wonder that wheels go to pieces sometimes under apparently inadequate provocation? A wheel runs possibly for years without trouble; it seems as steady-going and as harmless as the proverbial family horse. Some day, however, the governor belt slips a little, allowing the engine to gain a little speed above the normal, or possibly a heavy load is thrown off or on suddenly; the wheel lets go, and the result is chaos in concentrated form.

This matter of the slipping, not breaking, of the governor belt is worthy of some consideration. Almost all modern engine governors are furnished with safety devices which operate to keep the admission valves from opening in case the governor comes to a standstill either from the breaking of the belt or from the sticking of the governor itself. These devices are usually operated by the falling of the governor balls to their lowest position. It is easily conceivable that there could be a partial sticking of the governor, not enough to operate the safety device, but sufficient to cause the engine to speed up above the normal rate and thus possibly cause a wreck. Again, with a rather loose governor belt, if a heavy load is suddenly thrown off, the engine may at once commence to increase in speed while the inertia of the governor causes its driving belt to slip, and thus damage may be done before the governor can control the engine.

From the preceding it will readily be perceived that the design of flywheels and engines which shall be reasonably safe is by no means a mere matter of substituting numerical values in ready-made formulas. While the formulas are useful as guides, the use of sound engineering judgment gained by extended experience and observation is far more important. When equipment is to be purchased for a power plant the best course for the prospective purchaser to pursue is either to have the benefit of an expert consulting engineer, or, failing this, to consider bids from only those builders who have a record of years of success, and whose machinery is in widely-extended use by concerns of reputation. Machinery from such builders may be a little higher in first cost, but this extra amount is in general an excellent investment, as it assures the purchaser that his machinery is the concrete result of the highest engineering ability and mechanical skill, and that all of the resources of the science have been employed to assure safety, reliability and durability. The fact that that firm has turned out 1000 safe and satisfactory engines is a fair guarantee that their 1001 engine will be of the same character.

After purchasing and installing such machinery, is it advisable or possible to do anything further to secure freedom from disaster? The answer must be in the affirmative.

There are on the market safety devices of various kinds which are intended to keep a watch on the governor, and in case the latter is remiss in the performance of its duties the safety device is supposed to step in and take charge of affairs.

These devices are of such nature that if the speed of the engine increases above the normal by a predetermined number of revolutions the device promptly closes the

engine throttle. Thus as long as the safety device is operative as designed there is no chance of the engine running away.

In connection with this speed-limiting device there is usually installed a system of pushbuttons located in a number of places throughout the establishment. A push on one of these buttons releases electrically the throttle-closing mechanism, thus permitting the engine to be shut down from any of the pushbutton stations.

It is evident that such a system, if well designed, constructed, installed and looked after, will very considerably decrease the chance for accidents. The utility of a device permitting the shutting down of the engine in case of a broken shaft or other machinery, or of a belt running off and twisting around a shaft, or even of a workman getting caught in the machinery, by the mere pressing of a conveniently located button is apparent. The more prominent of these devices have been installed in large and increasing numbers, and some of them have made an excellent record in reliability and in their power of preventing accidents.

As the initial and maintenance cost of a system of this sort is very small in comparison with the value of the machinery

which it is intended to protect, it would seem to be as wise to use such devices as it is to carry insurance; in fact, the device should be regarded as a kind of accident insurance.

It must be remembered, however, that the safety devices themselves should receive inspection and attention to keep them in good operative condition. Most of these devices use electricity to release the throttle-closing mechanism, and they hence become inoperative in case there are bad electrical contacts or broken conductors. Electrical wires, as is well known, sometimes have perverse habits of working loose from under binding screws or short-circuiting, etc., and batteries have been known to run down mysteriously.

Hence to make such a system as certain in effect as possible it is advisable to inspect and test it at short intervals, one of the most effective methods being to use the pushbuttons in rotation as a regular means of shutting down the engine at stopping time. The speed-limit part of the appliance may be tested in a somewhat similar way, and this should be done regularly.

Eternal vigilance is the price of safety as well as of liberty.

Remarkable Growth of the Automobile Industry.

It is estimated that there are 70 establishments in the United States for the making and sale of automobiles, with a capital of more than \$20,000,000 and an output of about \$45,000,000. The industry is a child of but yesterday. It is doubtful whether any other industry of such magnitude and of such far-reaching influence, with such an apparently limitless future, has ever been created within as brief a period as that of the manufacture of motor cars, trucks, wagons, etc., for business and pleasure. The industry bears not simply upon the diversions of the American people, but touches a number of important lines of industry and trade, and is beginning to appear as an important factor in foreign commerce. Its growth is one of the real romances of American manufacture. It illustrates the ready adaptability of the American industrial and inventive instincts, some plants now making automobiles exclusively having developed from the manufacture, as a side issue in other industries, of minor parts of the machine, numerous establishments occupied with iron, steel, rubber, etc., having been obliged to diversify their operations, older modes of locomotion being influenced more or less by the newcomer, and, indeed, the public mind being given novel trends in many directions. Experiences of individual manufacturers type the general movement. To learn those experiences the MANUFACTURERS' RECORD addressed letters to automobile manufacturers of this country seeking a few facts comparing the number of employees at present and at the time of the establishment of the business, the value of the output then and the value of the output now, the amount of capital then and the amount of capital now, and the outlook for the future, with special reference to influence of the industry upon American life. In the following pages replies from a number of representative manufacturers are published:

The Part of Prosperity.

O. H. Perry, Columbus Buggy Co., Columbus, Ohio:

"The manufacturing of electric automobiles has been rather a side issue with us until this year. We have been manufacturing vehicles for 35 years, but just entered the automobile field last year. Our output last year was about 75 automo-

biles. This year we anticipate a volume of business aggregating about 500 jobs. To predict the future of the automobile would require, just at this time, a person endowed with certain ability such as the prophets of old were endowed with. The intense interest in automobiles will no doubt continue until there is a decided change in the present prosperous conditions prevailing in this country. Anyone entering upon the manufacture of automobiles in a very large way or anyone entering the field of prediction as to the future is treading a road that ordinarily 'angels should fear to tread.'"

As Compared With Locomotive Production.

Morris Grabowsky, secretary Rapid Motor Vehicle Co., Pontiac, Mich.:

"We started out two years ago in the manufacture of commercial power wagons, limiting our product to one model, with paid-in capital of \$5000. Three months later this was increased to \$25,000. November, 1904, it was again increased to \$60,000, increasing our output in proportion and moving into larger quarters. All these changes were made in Detroit. We moved into an old carpet-cleaning works, renovating same, but we soon outgrew these quarters and had to seek a more commodious building. We incorporated the following spring for \$100,000 and moved into the old Hodges Vehicle Co. building in Pontiac. Our first force consisted of five men, but in the Hodges Vehicle Co. building we employed about 50 men. In July, 1905, we increased our capital to \$250,000 and purchased 20 acres in the city of Pontiac and have erected what is probably the largest building for the manufacture of commercial power wagons in the world. We will occupy same within a week. We will probably employ about 500 hands. Orders have been coming in so fast in the past few weeks that we are already contemplating an increase of our capital and factory area. The value of our output the first year was about \$50,000; the estimated output for the present year would be \$3,500,000. The outlook for the commercial field is certainly enormous, and the effect on the copper, brass, iron and steel market has been to bring the demand far beyond the supply, as no industry has ever shown such increasing magnitude as

the automobile industry, and we feel positive that it will more than double the total value of the locomotive product of this country for 1906."

Steady Increase of Business.

Githens Bros. Company, State agents, Illinois and Wisconsin, Oldsmobile Company, Chicago, Ill.:

"Our business as originally established was a partnership consisting of W. L. and H. A. Githens. At that time, January 1, 1902, we invested \$5000. Our first year's business amounted to \$44,000, and the number of employees was three. On the 16th of October, 1902, we incorporated for \$30,000, took in outside capital and issued stock to the extent of \$18,400. Within the next eight months the original partners, W. L. and H. A. Githens, purchased all of the interests other than their own and continued the business under the name of the Githens Bros. Company. The second year we were in business we did \$173,000 worth of business. The third year our business amounted to \$140,000. The fourth year was about the same as the third. This year we intend to increase our business to about \$200,000. At the present time our lines comprise the Oldsmobile and Stearns only."

Selling the Easiest Function.

W. A. Pungs, president Pungs-Finch Auto & Gas Engine Co., Detroit, Mich.:

"We started in the automobile business about 12 years ago, but were too early in the field, so we had to let the business lay dormant until four years ago, when we took it up again. In our first season, 1901, we turned out about 10 machines at a value of \$12,000. The present season we will have 150 machines at a value of \$300,000, and next season, when we have our new factory, we will double this output, as it is merely a question of how many we can manufacture, as selling them is the easiest part."

Marked Effect Upon Iron and Steel Consumption.

Nordyke & Marmion Company, Incorporated, Indianapolis, Ind.:

"At the present time we are employing more than double the number of people we had five years ago, and within the same time the buildings and equipment of our plant have been almost trebled. The same conditions obtain as regards the value of output of our factory, and approximately the same as regards the amount of capital invested then and now. The above statements apply to our cereal-mill business, in addition to our automobile business, and we have not been in the latter business actively for a period of five years. We regard the future growth of the automobile business as being assured, as the automobile is not in any sense a fad, and whenever there is a tendency of production to overtake or oversupply the demand there will undoubtedly be a demand for commercial vehicles of various kinds that will absorb the surplus productive capacity for pleasure vehicles only. The business has already had a marked effect on iron and steel consumption, and we think will have a tendency to put the manufacture of certain iron and steel products upon a more scientific basis. The highest efficiency of motor vehicles can only be reached in combination with good roads; therefore it is natural to assume that the growth of the automobile industry will be followed by a decided tendency towards the improvement of roads and the enactment of special legislation for this purpose. As to the influence upon American life in general, will say that the automobile makes it possible for business men to live a considerable distance from places of business, and we believe that the refinement and perfection of the automobile as an instrument of both business and pleasure will be

followed by a tendency towards suburban life upon the part of many residents of the cities."

Began With Building Speed Gears.
C. H. Parkhurst, Peerless Motor Car Co., Cleveland, Ohio:

"This company started in the automobile business in 1898 by building speed gears for the small French De Dion-Bouton-Motorette, which was then being assembled in this country by a Brooklyn company. Two years later the Peerless Company produced its first automobile, and with about 75 to 100 employees turned out 35 machines in the course of a year. At that time the Peerless factory consisted of a reconstructed machine shop containing approximately 25,000 square feet floor space. Now the Peerless plant occupies five and one-half acres of land, over one-half of which its newly-erected buildings extend. About 500 workmen are employed, and the annual product amounts to considerably more than \$1,500,000. In addition to the investment in Cleveland, the company operates branches in New York and Boston, the two largest markets for automobiles in the United States. There has been no time up to the present when high-grade automobiles have not been in good demand. The tendency now is to settle down to standard and well-recognized principles of construction, and there is less desire on the part of buyers to experiment with unknown cars or devices. It seems to be the opinion of those best qualified to judge that many American cars are in no way inferior to the best foreign cars in design or workmanship. The earnest efforts of American makers are at present directed toward the improvement in quality of materials which will insure longer wear, greater strength and possibly reduced weights. Until within the last two years too little attention has been paid to the quality of the materials suited to the special demands of the automobile, but now steel manufacturers are striving to produce materials which will equal and very likely surpass the materials used in the best foreign cars. There is, of course, no reason why America should not produce better cars than foreign countries. America's machine tools have a world-wide reputation, and are largely exported. They are not only unsurpassed, but unequalled. With materials of the proper quality and the finest machine tools and equipment, America's product must soon gain the first place in quality. The pleasure automobile is not a fad; it occupies a very practical and beneficial place. It affords an easy and enjoyable means of transportation, and will tend to build up suburban life. The automobile, while expensive in itself, is a means of distribution of enormous wealth, and when we take into consideration the investment, the number of workmen directly or indirectly employed in their construction, salesmen in their distribution, chauffeurs and mechanics in their upkeep, there is no reason to fear that their extensive use will embarrass the financial strength of the country. They are bought by the middle and wealthy classes, and the benefit of their purchase goes indirectly to the working classes, on whom, ultimately, our prosperity depends. The use of the automobile affords pleasant relaxation to the busy man, and it is at least debatable if his earning capacity is not increased by reason of his use of the automobile. Aside from the pleasure vehicle, the commercial car has a field of its own which will be even larger than the present pleasure type occupies. It has been demonstrated that automobiles for trucking and light delivery purposes are economical as compared with the use of horses. The development of the industry has been exceedingly rapid, and but little attention

has been paid to the commercial side, but with the perfection of the pleasure vehicle, the enlargement of factories and the recognition of the importance of the commercial vehicle, rapid development in that direction is certain."

Demand Ahead of Production.

Hendee Manufacturing Co., Incorporated, Indian motorcycles, Springfield, Mass.:

"The manufacturing of Indian motorcycles is a new industry, installed about five years ago, so we can give you a few facts regarding the conditions at the time when the business was entirely new. Today we are employing about 50 hands, and purchase a large amount of our material in a manufactured state. The outlook for the future, as far as the Indian motorcycle is concerned, is very large and is increasing every day. Our machine is almost wholly made from iron and steel, and, as it seems almost impossible at the present time to secure any delivery whatever on material, we do not know what bearing the automobile industry will have on the iron and steel industry, as it would seem that the production was up to the limit and the demand growing greater daily. The bicycle did much toward the introducing of good roads, and the automobile is advancing the good work very rapidly."

A Difference in Establishments.

Marion Motor Car Co., Indianapolis, Ind.:

"This company was organized in December, 1903. Our first year was largely experimental, although we did build and sell about 50 cars, with an aggregate billing value of about \$50,000. During 1905 we enlarged plant and built 325 cars, with aggregate billing value \$487,500. During the ensuing season we will build and sell not less than 300 large touring cars, the selling value of which will approach three-quarters of a million dollars. Starting with a very small plant and coming up to the above output, the result is strikingly characteristic of the phenomenal growth of the automobile industry. Our plant is unique in one respect, viz., we make under our own roof and supervision all of the vital parts that enter into an automobile. Quite a few of the large manufacturers are merely assemblers, buying such parts as engines, transmissions, controlling members, etc., of specialists in these lines, and merely assembling them under their own nameplate. It occurs to the writer to warn you against an error that you might reasonably fall into on account of this very assembling proposition, that is, you might report the automobile manufacturers as building so many cars and again report the specialists as building so many engines, etc.; in such case you would be giving the vital parts twice."

Bids Fair to Be a Record-Breaking Year.

E. H. Cutler, president Knox Automobile Co., Springfield, Mass.:

"We started business five years ago with about a dozen men; we now employ 600. Business has shown an increase every year. It is, of course, impossible that this rate of increase should continue, but this year bids fair to be a record-breaker."

By Natural Differentiation.

Walter C. White, White Sewing Machine Co., automobile department, Cleveland, Ohio:

"Just at the present time it is a little difficult for us to give you any definite figures, except in a general sort of way, to outline the increase in our company during the last five years. In 1901 we were just beginning our motor-car output, and at that time our motor-car organization consisted mainly of an experimental department, which had been running for some time in connection with our sewing-

machine factory. As we commenced to turn out our output we found our own factory was entirely too small and took another one across the road. From then on we have increased our output steadily from year to year, and have been adding other factories for automobile business, until, in order to accommodate our growing business, we have deemed it advisable to get our factories all together on one plot of ground, and are commencing building operations with that in view. We expect to manufacture for this season about 1500 motor cars. These are all standard cars, the lowest price being \$2500 and the highest price in the neighborhood of \$4000. The outlook for the business seems to me to be particularly bright. There are immense fields where the motor car would be of a great deal of use that have not as yet been touched by the manufacturers of this country. In many ways it is going to be difficult to do very much in these fields—such as the commercial-wagon field—until we have better roads in the country districts. That these are bound to come I do not think anybody questions, and that it will be of an inestimable benefit to the country by enabling the farmer to market his produce easier and quicker than ever before is a matter too obvious to be questioned. No one doubts that in the development of this country the railroads have played a prominent part, if not the most prominent part of any one element that has gone to make up the tremendous growth and prosperity, and we firmly believe for the motor car in its various forms of development there is an equal if not greater part to be played in future."

Told by Progress of Sales.

C. G. Fisher, Fisher Automobile Co., sales agent, Indianapolis, Ind.:

"Five years ago I sold 10 machines the first year, total value \$5000. Our company sells annually from 150 to 200 automobiles, representing a total value of \$300,000. We now have about 20 men in our establishment. We have our own three-story building, with 20,000 feet of floor space. At the time we started in business we had about \$3000 invested in stock, and we have now invested in our stock about \$35,000. There is no question but that as soon as parts become standard the automobile in the runabout type will be much cheaper, and that within a very few years it will be the generally-accepted mode of conveyance over good roads."

Promises to Be One of the Largest Industries.

L. H. Chadwick, Fairmount Engineering Works, Philadelphia, Pa.:

"We note your figures on the automobile output last year compared to locomotive production in this country, and presume that the figures are not far wrong. The automobile building promises to be one of the largest industries in this country, and is being very rapidly developed. Regarding our own individual business, will state that we have only been in business a little over two years, but in that time it has increased from practically nothing to \$120,000 output per year."

Revolutionizing Modes of Travel.

O. Y. Bartholomew, treasurer Bartholomew Company, Peoria, Ill.:

"We have been in the automobile business about five years. We commenced, of course, in a small way manufacturing runabouts only; selling price of same was \$750. We had probably 15 or 20 men employed at the start, with probably an investment of \$15,000 in the industry. The business has increased in five years until we are now making three styles, one selling at \$800, one at \$1250 and one at \$3000. The extent of our sales the first year were approximately \$30,000; the extent of our sales last year was about

\$100,000. We now have about 75 men employed, and our investment now in that department is about \$125,000. The outlook for the future in the automobile industry is that it will steadily increase in proportions and machines will gradually increase in popularity until they will be considered the regular means of transportation by the majority of people. There will continue to be no doubt street-car traffic and vehicles drawn by horses, but the future, it seems to us, will bring about a great change in the means of travel for pleasure and the means of propelling business and commercial vehicles, so that in the course of a few years self-propelled vehicles will be the regular thing and the exception will be horse-drawn vehicles. The growth of this industry will naturally call for very large consumption of iron and steel, and it will also call for better road-building. This, however, we believe should come even if it were not for motor cars, as the American roads are far behind Old Country roads, and should be improved, and more than likely will be. The effect of this industry upon American lives is likely to be far-reaching. In the corner's report for last year in the city of Chicago statistics show that there were more people kicked to death by horses than were killed by automobiles. More than 70 deaths were caused by railroad accidents in the city of Chicago for every death caused by an automobile. There were more people accidentally choked to death than were killed by automobiles, and there were 90 suicides to every death caused by an automobile. There does not seem to be any barriers in the way of this business flourishing to an extent that will be most astonishing to those even who are giving careful attention to these situations."

Stimulating Other Industries.

Elmer D. Apperson, Apperson Bros. Automobile Co., Kokomo, Ind.:

"We have been connected with the automobile business for about 13 years. During the past year our present plant has grown considerably. It is probably three times as large as it was five years ago. The value of our output five years ago was probably \$75,000 per year, and at the present time it is about \$500,000. The outlook for the future in this business is, in our opinion, about as follows: We estimate that there is about three times as many manufacturers in the business now as will be required to manufacture the necessary amount of machines to supply the demand, and it has been freely predicted by a great many of the manufacturers that the business will ultimately go like the bicycle business; that is, the competition will drive the price below any margin of profit, which will result in the downfall of one-half of the concerns now in the business. The cost of selling automobiles is more than tripling every year, and it will be a short time until the selling expense will consume all the profits that is to be made on the machine. The effect on the iron and steel industry is that it will stimulate these trades for a certain length of time, but, in our opinion, will be of no particular benefit to them permanently, only in certain lines. The steel required for good automobiles is made entirely special, and does not concern the general merchant product of the country. If the automobile business continues to grow and prosper it will have a very good effect on the building of good roads, and has already helped the good-roads movement to a considerable extent."

To Lead to an Era of Road-Building.

G. V. Rogers, Mitchell Motor Car Co., Racine, Wis.:

"Our volume has increased fully 100 per cent. per year during the last five years.

At present our output is in excess of \$1,000,000 per year, and we have invested in the business \$300,000. All conditions would indicate that the industry is only just started, and we confidently look forward to its growing as much in the next five years as it has in the past five years. We do not believe this is going to affect the iron and steel industry to any great extent, but it is without doubt going to lead to an era of road-building in the very near future, and, in our opinion, will make as distinct a mark on American life as did the railroads, telegraph and any of the other modern necessities."

The Advance of Five Years.

O. L. Halsey, Halsey Automobile Co., St. Louis, Mo.:

"We entered the automobile business in September, 1900, with one employee. At present we are employing from 25 to 30. Our first year's business amounted to about \$30,000. Our last year's business was approximately \$280,000. We started with a capital of \$10,000, and now have a capital and surplus of about \$60,000. From the present outlook of our business, we think the automobile industry will be more than doubled next year, and its effect upon the iron and steel consumption will be considerable. As the number of automobiles used increases the building of good roads, etc., will increase accordingly."

Grew from an Experimental Side Line.

Auburn Automobile Co., Auburn, Ind.:

"Our business, which started four years ago, was an experimental and side line to another business which we are operating. Two years ago we incorporated, and are now running the business independently of other company. From the few sample machines put out the first year we have worked up a business in a local way to a point where we expect to ship 100 machines this year."

Motor Cars and Motor Boats.

H. A. Lozier, president Lozier Motor Co., New York city, N. Y.:

"This company has been making gasoline motors of two and four-cycle types for motor boats for the past eight years. From the very beginning a close watch was kept of the progress of the automobile, and experiments made. Three years ago the time had come, in our judgment, to manufacture motor cars, and we immediately set to work to build as good as was made in any part of the world. It took us 19 months to build a car that was satisfactory to ourselves, and in the following 16 months we built and put on the market but 25. This naturally made the cost of the 26 cars expensive, but our object was to avoid * * * rushing a lot of cars on the market and having them far from satisfactory. This coming season we shall build 150 cars only. We employ nearly 400 men, and with this number and with our facilities it would be an easy matter to turn out from 800 to 1000 cars of indifferent quality. Our object, however, is to increase our product at a slow rate, and not build more cars than we can, and build as good as any made anywhere in the world. The capital employed in our business is over \$700,000, and the greater part of our facilities and resources are devoted to the automobile business. The average retail price of our automobiles will be \$5500 each, which would make the value of our product in this department \$725,000. The marine motor and motorboat output would bring this amount up to about \$1,100,000. The outlook for the future, as far as we can see, seems to be very bright. The demand for touring cars, especially those equal to the best foreign cars, far exceeds the supply, and it will be some years before this can be filled. Business in the trucking line contains such

stupendous possibilities that we hesitate to express an opinion as to its ultimate development. The effect of the growth of business on good roads must necessarily be beneficial, and we look for direct results within the next five years. The farmers throughout the country are prosperous, and many of them now own small motor cars. When the farmer realizes the great benefit of good roads the opposition to building them will be very greatly diminished."

To Change City Conditions.

H. H. Franklin, H. H. Franklin Manufacturing Co., Syracuse, N. Y.:

"We started in the automobile business about four years ago. At that time we employed 13 men; today we employ nearly 1500 men. The value of our product has grown from about \$15,000 the first year to \$2,500,000 for 1906. For 1907 our output will be \$4,000,000. The outlook for the business, as we see it, is encouraging. The future of the automobile is assured. The automobile takes people out in the air and into the country, therefore the automobile is going to be a great factor in solving the problem connected with congestive city population. The open air tends to soundness of body and saneness of mind. The automobile, like the trolley and all other means of quick transportation, will have a great influence upon the center of the population. The automobile offers special advantages for getting into the country or back to the city to business in quick time. The automobile absolutely means that the coming generation will see a fast change in conditions governing city life. Fine residences will be built in the suburbs and in the country instead of in the crowded city. This means good roads and also changes in many directions. Country residents will require all the conveniences and luxuries of the city house. Lights and water will have to be distributed over large areas. The rural free delivery will lose its distinction and mail will be freely delivered everywhere. The use of the automobile is only just beginning. In the past the automobile has been largely a pleasure thing—something to ride in because of the novelty. All this is rapidly changing. The closed car or town carriage, now beginning to come in, will become general. These will be made even more luxurious than the most luxurious of carriages. They will meet every requirement of travel, shopping and pleasure. American manufacturers have been slow to recognize this feature of the automobile business. The number of broughams, limousines, landaulettes, etc., on exhibition at the show this year indicates a decided change. Another year will see these cars still more popular. The automobile will meet every requirement of the family, and eventually it will fully cover the commercial field. The horse will gradually disappear from city life. Since an automobile is largely made up of iron and steel, it is evident that it will have a great effect upon this industry. Indeed, steelmakers are already awake to the large field offered by the automobile, and special efforts are being made to meet the particular requirements. Each year's use of the automobile has shown that better material is required. For this reason the cost of the automobile has gradually increased, and there is no present prospect of a reduction in selling prices."

Era of the Standard Car.

G. M. Davis, E. R. Thomas Motor Co., Buffalo, N. Y.:

"I think that the growth of the E. R. Thomas Motor Co. in the last five years typifies as well as anything what the general growth throughout the country has been. Five years ago there were 40 men employed and the capital stock was \$100,-

000; today we have 510 workmen and the capital stock is \$500,000. The figures as to the output of the company then and now would have little comparative value, since motor cycles were manufactured at that time as well as automobiles. Since then the motor-cycle business has been divorced from the automobile branch, and both are now separate institutions. The outlook for the future is of the very brightest. Ever since automobiles first came into general use in this country the foreign cars have had the lead and preference. This year, however, a marked change has been felt, in that the American cars have reached a standard of excellence where they are not only equal to but superior in a great many respects to foreign cars. American cars have always been better adapted, generally speaking, to American roads than the foreign cars have been, while in the details of construction the foreign cars have been in advance. Now, however, construction methods here have improved to such an extent that we believe the foreign cars have been almost entirely pushed into the background, with the exception of a few localities where every sign shows they are losing their prestige so long enjoyed. The automobile business has now reached a point where the demand can be gauged and the output made to conform to the time. In our own case this statement is perhaps not wholly true, since the demand has been so great this year that it keeps us working night and day to keep up with orders, and apparently there is to be no end to this for some months to come. The standard of construction has now arrived, and there will be but little change from year to year compared with what there has been in the past. There are thousands of people throughout the country who decline to buy cars now on the ground that they will not become automobile users as long as their cars purchased one year ago will be wholly out of date the next. To convince these people that the era of the standard car is here will require a year, but once they are convinced there will come into the automobile field a vast number of purchasers who will be satisfied with nothing but cars of the best grade. The benefit to the iron and steel industry cannot be overestimated. It has created an entirely new field of industry for them, a fact which is proved by the establishment of experimental departments by a number of the larger concerns for the purpose alone of finding the best grade of materials for automobile use. Cheap materials cannot be used in the construction of an automobile that must stand the wear and strain that every one of them is compelled to. Good material requires first-class workmen—the kind of men that draw good wages and are steady. It would be impossible to estimate the thousands of men who have been given employment through the automobile industry, either directly or indirectly. A glance through the show numbers of some of the automobile publications would give a good indication of what the automobile business means to the different concerns. In some cases scores of pages are given over to advertisements by firms who have parts and accessories to sell. Many of these firms have been formed since automobiles came into use in this country, and devote almost their entire attention to the making of automobile sundries. One of the first demands by the automobile owner is for the betterment of the roads. No one thing has ever brought to the attention of the taxpayers the condition of American roads as the automobile has. In every part of the country men who ordinarily have no interest in thoroughfares aside from the paving in front of their own homes now take a lively interest in improving the conditions

in country districts, and the effect of their efforts can be noted in every State legislature by the passage of laws for the improvement of roads and by the big issue of bonds that is now being made to meet the combined requirements of the farmer and the automobile tourist. New York alone will spend \$5,000,000 on good roads within the next few years. A project is on foot to build a road from New York to Chicago, and similar projects for better roads in different States are on tap. Everywhere cross-country tourists are showing up the inadequacy of the roads in Western States, which must inevitably result in some good."

Effect Upon Suburban Life.

James Couzens, secretary Ford Motor Co., Detroit, Mich.:

"We agree with you that it is doubtful whether any other industry of such magnitude and of such far-reaching influence has ever been created in so brief a period. We believe that this statement can be made without a question of a doubt. With reference to your inquiry as to some facts regarding the extent of the development of our individual business within the past five years, would say that we have only been established since June 17, 1903, or a trifle over two and one-half years, although our Mr. Ford has as an individual been experimenting and developing automobiles since 1892. Owing to the policy and methods pursued in producing our product, it is not possible to arrive at the number of hands employed in producing our product. The number of hands employed in our own factory is comparatively small with the output we have, because most of our work is done under contract by manufacturers of special parts. We probably have employed in our factory during the busy season some 300 men, but in making the parts for our cars in the various factories in Detroit and elsewhere there are several thousand men employed. The value of our output in 1903 was something like \$200,000, and the value of our output this year will be something over \$7,500,000. Amount invested in 1903 was approximately \$50,000, and we have invested now approximately \$500,000. We hardly believe, however, that the industry has any general effect upon the iron and steel consumption, because there is not a great deal of either used in the construction of automobiles. The effect upon the building of good roads is almost immeasurable, as there has been an enormous amount appropriated by the various legislatures for the building of good roads since the introduction of the automobile. The automobile has a most far-reaching influence upon American life, and especially in connection with the rural districts and country places surrounding the large metropolitan centers. The growth of the industry has been wonderful, and it is safe to say that it will be much greater in the next few years than in the past."

Finds Opposition from Farmers.

V. M. Gunderson, secretary and treasurer Northern Manufacturing Co., Detroit, Mich.:

"Our company was organized in 1901, when we built the first experimental Northern runabout. In April, 1902, we began actual shipment of cars, and during the year our output amounted in value to slightly over \$100,000. The following four years our business increased steadily, and our output of machines at the present time approximates in value \$1,000,000. During this time we have never taken any money out of the business, but have left the accumulation of profits take care of the growing trade. As we are backed by a company with practically unlimited means and with some 40 years' manufacturing experience, we have proceeded care-

fully to build up a business which will remain on a substantial footing after stronger competition sets in, as it inevitably will in the course of the next two or three years. The output of automobiles has already had a very marked impression on the iron and steel markets, and has saved a great many manufacturing industries from bankruptcy. Carriage-body builders were doing very little work, and the automobile industry has kept them running throughout the entire year, and some, in fact, are running 24 hours per day. The drop-forging plants throughout the country were begging for work after the slump in the bicycle business, and today they will only guarantee deliveries six months to a year after orders are placed with them, and unless more forging plants are immediately installed the automobile manufacturer is going to be badly crippled on account of its inability to get forgings. Steel stamping plants have about all they can do to supply the automobile manufacturers with frames, brake drums and a great many other parts. The facts are that the automobile manufacturer today has to beg for his material. We discount all our bills, but have learned during the past season that our money has apparently little commercial value in the present state of the trade. We believe that if a great many of the capitalists who are ready to invest their money in the automobile manufacturing business would put their investments into plants to supply the automobile manufacturer it would be found more remunerative than going directly into the automobile game. We believe that if the increase of automobile manufacturers continues in the same ratio in the next two or three years as it has in the past there will be an overproduction of cars, but there is a great field now open for manufacturers of all kinds of material entering into the construction of automobiles. We believe that the automobile has already had some good effect on road-building, but we find that the farming community is as much opposed to automobiles as they were to bicycles, and we do not look for any marked change in the road conditions for some time to come."

Increased Rapidly from Year to Year

C. H. Haynes, secretary and treasurer Haynes Automobile Co., Kokomo, Ind.:

"Number of hands employed five years ago, 50; today, 275. Value of output five years ago, \$75,000; 1906, estimated, \$640,000. Capital five years ago, \$25,000; capital today, \$275,000. The interest seems to increase and the business has grown very rapidly from year to year, and we believe it will continue to increase for some time to come. To just what proportions it will reach we cannot say. We think it has come to stay, and will continue from now on one of the largest industries of the country."

Field for Commercial Motor Trucks.

H. A. Knox, president Knox Motor Truck Co., Springfield, Mass.:

"Our company was organized December 1, 1904. We employ at the present time between 50 and 60 hands, and are adding continually to same. We have about \$100,000 invested in our business at the present time. The value of our total output is about \$75,000. We build heavy gasoline trucks exclusively, and firmly believe that the manufacture of commercial motor trucks will eventually be one of the largest and most prominent and successful industries in this country."

An Encouraging Outlook.

Warner Gear Co., Muncie, Ind.:

"This is our third year, and at the present time we are employing about 150 mechanics. The outlook from our standpoint is exceedingly encouraging for a very large business in this line. The value of our

output will run about \$200,000 per year; investment about \$100,000."

Still in Its Infancy.

E. B. Johnson, general manager Chadwick Motor Car Co., New York, N. Y.:

"We are not in much of a position to give you any valuable information on the subject requested, as we have not been manufacturing automobiles in the general

sense except this season. For the past three years we have made only five machines on special orders, but this season are making 30 for general sale. These cars are \$5000 each, making the sales for our first year \$150,000. The car is 40-45 horse-power, with a four-cylinder engine. We believe that the automobile industry is in its infancy, and that the next year will show remarkable strides."

Naval-Stores Potentialities of the South—III.

By JOHN BANNON.

[Written for the Manufacturers' Record.]

At this stage of our disquisition on naval-stores potentialities of the South it occurs to me that the methods which have proved efficacious for the perpetuity of this important industry in France, if described in detail in the MANUFACTURERS' RECORD, would be productive of beneficial results, if only judged from an educational standpoint. I have been to pains to secure authentic information, which is of a technical nature, on this subject. The following, translated from a recent French treatise on naval-stores products of France, outlining in detail the various processes from the planting of the tree, through its various stages of life, until exhausted as a producer of resin gum, will no doubt prove of more than ordinary interest to those identified with naval-stores industries and allied lines in the United States.

All French resin comes from the sea-coast, from the Landes department referred to in our last article, where the sea pine is grown, partly direct from seed and partly from nurseries of young plants grown elsewhere. The transplantation method, however, does not produce such good trees as the other, which is, therefore, the most usual. The young trees are carefully examined every four or five years and the weakly ones are cut down to afford more room for the others. After 25 or 30 years' growth the trees stand from four to six feet apart, and a final weeding out is accomplished by the so-called process of bleeding them to death. This operation consists in making two very large incisions opposite each other in the trunk. From these the resin flows and is collected; the tree then rapidly declines and is felled four or five years later.

There is yet one more selection made among the trees, and the finest are preserved for a regular resin harvest. These survivors stand about 25 feet apart. The others are bled to death in the same way as the first lot, and are felled five or seven years after the operation. When the trees which are to be finally preserved have attained a diameter of about a foot the harvest begins. By means of a special axe an incision is made at the foot of the tree in April, and it is then gradually lengthened until September, by which time it is about 20 inches long. These incisions have to be renewed every three or four years. At the beginning of the season, that is, in the month of March, the bark is removed from that part of the tree from which the resin is to be obtained. The following year the incision is lengthened upward, and so on for five years, until it is 8 or 10 feet long, when the same operation is begun on the opposite side of the tree, and in time the circuit of the tree is made clear back to the first incision, which by this time has healed. This work is skillfully carried out, and by such treatment a tree will yield resin for 200 years. In the old and simpler processes a small hole was made at the base of the tree, into which the resin flowed. Just as long as the tree is only stripped close to the foot

of the trunk the yield is good; but when, after about three years, the incision has reached a certain height, results are not so good, for the reason that the sun's heat either volatilizes or resinifies the turpentine, so that the quality as well as quantity of the resin suffers in proportion. The new process, the Hughes system, not only avoids these drawbacks, but delivers a good resin free from earth and vegetable fragments. Prof. Charles Herty, formerly of the forestry division of the United States government, was evidently guided in his work of investigating the condition of the Southern pineries in the interest of the government by the Hughes system of bleeding, the Herty process being in its main features identical. The Hughes system consists in hanging a pot on an iron spike at the end of the incision and moving it up as the incision is lengthened in subsequent years. The resin then flows into the pot immediately it leaves the tree, and does not lose its turpentine. The pot is emptied every two or three weeks into other receptacles, from which the resin is transferred to the casks. In October the resin which has stuck to the tree is removed and mixed with the other for distillation purposes. It is, however, sometimes kept by itself and sold under the name of galipot or barasse.

The resin obtained in this way is, as is well known, the raw material for turpentine, and is a mixture, or rather a solution, of colophony in turpentine. In the distillation the turpentine comes over and the colophony remains behind as a residue.

The distillation is carried out in France in small factories, often located right in the pine woods as in the Southern States. As soon as the resin reaches the factory it is emptied into great wooden vats holding about 8000 gallons. From there it is transferred to copper boilers holding 500 or 600 gallons. Here it is heated for a whole day, and water and plant fragments, such as leaves and twigs, eliminated. The mass is then filtered through a straw filter into another copper vessel. The filtered resin, after the water has been allowed to run away, is distilled in copper stills holding each 60 or 70 gallons. The receivers for the condensed turpentine are of wood. After the distillation of the 60 gallons or so has proceeded for 15 or 20 minutes about 20 gallons of hot water are run into the still. This water is necessary to secure the evaporation of the last traces of the turpentine. The water comes over with the turpentine, but as the latter floats on the former, there is no difficulty in separating them.

When the stream of condensed turpentine from the worm has nearly ceased the addition of hot water is stopped and the distillation itself soon afterward. The yield of turpentine amounts to from 15 to 18 per cent. of the resin distilled. The residue is run out from the still through a perforated plate to filter it from the coarse impurities and a fresh lot of resin is immediately put into the still without allowing the latter to get cooled. In this way from 8 to 10 distillations are carried

out in a single day. The distilled turpentine is yellowish, the color being due to the presence of particles of resin which have distilled over. The turpentine will consequently leave a residue in evaporation, and must therefore be purified by redistillation. The rectified turpentine is a colorless liquid of characteristic smell. It usually reddens litmus paper on account of the presence of succinic acid. It is volatile, burns with a powerfully smoky flame, is scarcely soluble in alcohol, and absorbs oxygen when exposed to the air.

Sassure has proved that this absorption of oxygen amounted in four months to twenty times its volume. The residue when the resin was harvested by the old process was called clear residue, but that obtained by the Hughes process is sold as yellow colophony. The ordinary black rosin consists of the parts next bottom of the still. The rosin, instead of being put into cask, can be used at once for producing a better grade. For this purpose it is stirred up with 12 to 15 per cent. of its weight of water until the latter is thoroughly incorporated with it and a uniform turbid mass is obtained. When this is cold it has a pale yellow color and is sold for making torches under the name of yellow rosin. The impurities collected in the straw filters previously mentioned are sometimes used as fuel, but are at times distilled with water to obtain more turpentine, of which they yield about 10 per cent. of their weight.

WEST INDIA TRADE.

Nearby Opportunities for Atlantic and Gulf Ports.

Editor Manufacturers' Record:

The wonderful romance of Southern development, truth stranger than fiction, in the 25 years since 1880, so ably and persistently kept before the people in your valuable journal; the certainty that this wonderful story of a section's progress is only of the infancy of such development, suggests a line of thought upon the markets the South should cultivate.

It seems to me certain that a wonderful development is assured for all the deep-water ports with a channel depth from the docks to the sea of 25 feet and over. There are but 24 such ports upon all our coasts. Men can make cities in the interior; nature made the seaports, and with no thinkable expenditure of money can the number of such deep-water ports be increased to a total number of more than 35. Of such deep-water ports the South has Norfolk, Newport News, Charleston, Port Royal, Savannah, Brunswick, Fernandina, on the Atlantic coast; Pensacola, New Orleans, Sabine Pass, Galveston, probably one more, on the Gulf coast—practically one-half of all such ports; at least, one-half of those which can be made deep-water ports.

The Southern States are shipping from cotton factories through Vancouver by a long rail haul. There is much said of the trade of the Orient. This trade captures the imagination, always captured it, and always proves a fascinating study. In any gathering of intelligent, well-informed men a considerable number will have reasonably accurate knowledge of this Far Eastern trade, but few will have any but the vaguest idea of West India, Central and South American trade.

The trade of the Far East is important. Southern newspapers ably discuss the benefit sure to come to the South and its ports from the completion of the Panama canal. These benefits to the ports, then, nearest to the trade of the Far East cannot be overestimated.

But erroneous statements as to West India, Central and South American trade are frequently published by the press of the country, and, of course, accepted by

the general public as true. It is too near us to arouse imagination, and yet this trade is nearly as great as all the commerce of the Far East with the entire world. The Eastern trade is about \$1,400,000,000, the West India and Central and South American over \$1,200,000,000; yet, far nearer to us than to any other country, the United States controls less than one-third of this nearby trade. The United States imported last year \$467,000,000 worth of tropical and subtropical products, the only class of imports received from the West Indies, Central and South America, and yet imported a large proportion from the Far East, transported thousands of miles against hundreds from these nearby markets.

Within the scope of an article for which you can find room I cannot do more than present some of the most striking facts in relation to this nearby and existent trade, limiting myself to Cuba and Porto Rico. The United States has increased in imports a little more than 39 per cent. from 1898 to 1905, and in exports for same period a little more than 16 per cent., while the increase in imports from Cuba to the United States for same period has been over 300 per cent. and the increase in exports from the United States to Cuba for the same period over 220 per cent. For the same period the increase in exports from United States to Porto Rico has exceeded 800 per cent. and the imports over 450 per cent. In round numbers, the trade of Cuba with United States in 1898 was, exports and imports, \$28,000,000; in 1904, \$108,000,000; Porto Rico less than \$4,000,000 in 1898 and about \$23,000,000 in 1904. The gain for 10 months in 1905 in such trade over 10 months in 1904 was \$27,000,000 for Cuba and over \$5,000,000 for Porto Rico.

The increase of this trade only would make every Southern deep-water seaport rich. These Southern ports handle less than \$20,000,000 of the commerce of both islands with the United States in a total aggregate export and import trade at this time reaching nearly \$160,000,000 per year. Does the South need this trade?

There are eight boot and shoe factories in Georgia, Alabama and Tennessee. Exports of boots and shoes to these islands from the United States has increased in seven years over 5600 per cent. There are 168 iron and steel establishments in these States. The percentage of increase of exports of these products to these islands in seven years was over 600 per cent. There are about 800 cotton factories in the South. The exports of cotton goods in the same period to these islands have increased over 300 per cent. There are six car factories and a number of carriage factories and wagon factories in the States named and many elsewhere in the South. The increase in exports of such products in seven years was 2700 per cent.

Wonderful as the growth of this commerce has been, unequaled in commercial history, it is in its infancy. In the seven years \$50,000,000 of American capital has been invested in Cuba, a complete system of railroads are nearly completed, 1400 miles supplemented by nearly 1000 miles of private railroads, public roads are in course of construction by the government, there is a large balance of trade in her favor and a large surplus in her treasury, the Platt amendment insuring stable government.

This commerce made New Haven, was an important factor in the commerce of Providence, New York, Boston, Philadelphia, and laid the foundation for many of the large fortunes and great philanthropies of Baltimore. It belongs peculiarly to the South and Southern deep-water ports.

Let us not wait for the completion of the Panama canal, but at once capture a

fair proportion of this ever-increasing commerce. C. P. GOODYEAR.

Brunswick, Ga.

WILL BUILD THREE PIERS.

Contract Awarded for Part of Baltimore's Water-Front Improvement.

The second anniversary of Baltimore's great fire was fittingly celebrated on February 7 by the Municipal Board of Awards awarding contracts to the Degnon Contracting Co. of New York for the construction of Piers 1, 2 and 3 of the six modern piers and docks to be built in the upper harbor, and extending from Bowly's wharf on the west to West Falls avenue on the east.

These piers are to be constructed of stone on pile-and-timber foundations, and some idea of the great amount of work involved may be obtained from the following approximate total quantities:

Old wharves and bulkheads, 4812 linear feet; filling behind new walls, 31,576 cubic yards; excavation above M. L. W., 57,250 cubic yards; excavation below M. L. W., 317,400 cubic yards; yellow-pine piles under wall, 2365; yellow-pine piles in rear of wall, 1610; yellow-pine piles in alternative fender, 568; white-oak piles (corner fenders), 27; yellow-pine timber in foundations, 1,553,750 feet B. M.; yellow-pine timber in alternative fender, 59,000 feet B. M.; white-oak timber in fenders, 54,900 feet B. M.; masonry, 2851 cubic yards; concrete, 187 cubic yards; coping, 4492 linear feet; iron (exclusive of shoes), 6755 pounds, and treenails, 42,555.

The bid of the Degnon Contracting Co. on these quantities was as follows:

1. For excavation above low water, 20 cents per cubic yard.
2. For excavation below low water, 20 cents per cubic yard.
3. For removing old piers, bulkheads, etc., piles, timbers, etc., \$115 per 100 linear feet.
4. For yellow pine piles driven and cut off, \$6.35 per pile.
5. For oak piles driven and cut off, \$14.65 per pile.
6. For white oak in fenders, framed, fitted and fixed complete, as per plan, \$45 per 1000 feet B. M.
7. For alternative fenders to No. 6, \$6.35 per pile; \$46 per 1000 feet B. M.
8. For all timber, plank, etc., including all labor and workmanship in fitting and fixing in place, \$46 per 1000 feet B. M.
9. For all iron bolts, spikes, ties, straps (to include anything of iron used in the work), 4½ cents per pound.
10. For locust treenails, \$2.30 per 100.
11. For all masonry laid in place, including stone, sand, cement and every item of labor and work, \$16 per cubic yard.
12. For coping secured in place, \$2.90 per linear foot.
13. For concrete under wall, \$6.50 per cubic yard.

The aggregate bid of all these quantities is about \$231,000, and the contract provides for the actual construction work to begin by March 15 and to be completed on or before September 15, 1907.

The sizes of the piers are as follows:

- Pier 1—Width, 150 feet; length, 550 feet; area, 78,445 square feet.
 Pier 2—Width, 200 feet; length, 635 feet; area, 126,788 square feet.
 Pier 3—Width, 200 feet; length, 770 feet; area, 152,881 square feet.

Between each of the piers will be docks 150 feet wide and having a depth of 24 feet at mean low tide, and a paved driveway 50 feet wide will be constructed down the center of each pier.

The plans and specifications for this work were prepared by Maj. N. H. Hut-ton, harbor engineer, who will direct

supervision of the work. It is the intention of the city officials to complete these piers before starting construction work on the remaining three, so that the shipping interests may be affected as little as possible.

Literary Notes.

The Coming Crisis and Three Ideas. A work in two parts. By Gustavus M. Pinckney. Publishers, Walker, Evans & Cogswell Company, Charleston, S. C. Price \$1.60.

One must have a firm grasp upon the reality of things to discuss intelligently American political tendencies without trenching upon partyism or sectionalism. One must have a fine sense of humor to carry through the discussion so kindly, so clearly, so logically, and yet withal from such an angle as to leave some of his readers, perhaps, in doubt as to whether he had seriously sounded an alarm for the future or had in unbiased philosophic weighing of facts of apparent crisis given vindication of farseeing and patriotic, unswerving and fearless maintenance of a conviction in the past which, because it did not prevail, has been held to be empty theory. Such a one is Mr. Gustavus M. Pinckney of Charleston, S. C. A few years ago he published a treatise of the life of John C. Calhoun, strikingly illuminating because it was alive with the utterances of the great Southern statesman. Read at the close of the nineteenth century, those utterances of 50 years before, balanced as they were in Mr. Pinckney's work, took on the character of prophecy fulfilled. Something of the spirit animating the earlier work seems to breathe from the pages of "The Coming Crisis" which the author defines as "a forecast of the crisis which seems surely indicated by those tendencies and principles hitherto exhibited in the course of American history, with an effort to discover how it may best be met." The book is a plea in behalf of rule by consent of the governed as against absolutism of an individual or of a bald majority. It is a vigorous exposition of the principles for which Calhoun stood—an exposition singularly free from the mistakes into which some sincere students and followers of Calhoun of the past and the present have fallen and emphasizing the strength of the principles by its comments upon existing conditions against the probability of which the principles were set in the long ago. It points to the conclusion that the principles, instead of being the creatures of logic in fantasy, were living things that might have contributed to the health of the country had they not been overwhelmed in manifestations of rule by the consent of the majority.

Mr. Pinckney argues that society under government naturally tends to fall into two parties, the one, through attachment to the consumption of taxes and increase of power, tending to absorb the rights and the property of the second, which is attached to tax reduction and power limitation; that, unchecked, the first party will steadily encroach until the second for self-preservation must resist; that the result will be revolution with continuance of absolute power or a change to constitutional government in agreement between the conflicting parties; that agreement implies the maintenance of power by the second party to secure compliance with the terms of the agreement, and that yielding by the second party in case of dispute, even in a single point, will vitiate the agreement and amount to a reversion from the constitutional to the absolute type. He contends that unlimited rule of the majority is absolute government, and suggests that the existing government of this country really conforms to the absolute

type instead of the constitutional; that the process of encroachment upon the minority has been progressing for a long period and is going forward at a rapid rate, and that it is to be certainly apprehended from the rule elsewhere that a crisis and the issue of force is not far away. The author credits the American people with a sanguine, buoyant and cheerful temper, sweetened by honest toil, and is convinced that would they continue their labors in peace and quiet they should no longer sleep on their rights. To awaken them he would organize real public opinion, as it has never before been organized, first, to deal with the problem of the standard of value, and second, to make effective the means for allaying the irrepressible conflict between majority rule and government by consent, "the only government that can possibly endure." His argument points to nullification as the means. He says:

"The protection afforded by requiring consent of the governed would be perfectly insignificant if refusal to consent did not stay action. This nullification is merely the remedy in cases where the governed do not consent to the action of the government. If they do not consent, in order to make their refusal to consent effective they must nullify. There seems to be no conceivable alternative. If in cases where the government in its action exceeds the limits of the consent of the governed, they fail to nullify that action, the government at once reverts to the unlimited type, no longer is based upon consent, and becomes thereafter an unjust and therefore unstable government; consent as the conservative principle has disappeared; no conservative principle remains; only force remains. It is, in fact, the end of law and order. Thereafter the unlimited government of the majority, obeying the universal principle of human nature, will steadily advance in enlargement of its power. It will push encroachment further and further upon reserved rights; it will absorb more and more property of the citizens through unjust and unequal taxation; it will steadily, uninterruptedly, certainly increase oppression until finally down-trodden humanity, forced to the wall, will be driven by the mere motive of self-preservation to resist, tender the issue of force, revolt; when the issue will be tried by arms and some new form of government result."

It is the part of wisdom, perhaps, though regrettable, that Mr. Pinckney leaves his readers facing a query to some extent; in that, he sets them to original thinking. They will naturally ask, in view of the ease with which channels of public opinion may be given a twist at their source—and a volume could be developed on that point alone—how real, vital, healthy public opinion is to recognize itself when it has been evolved. They will also ask how nullification is to become effective for good in government without that healthy public opinion to sustain it. The common consciousness of America has become so warped that it has difficulty in distinguishing between right and wrong and in understanding that an individual or a minority may be right in spite of the convictions of the multitude or the majority. Nullification without the support of public opinion would be as futile as is the international law of the day without brute force to back it. Nullification, moreover, is the antithesis of what sometimes seems to be the natural inclination of human beings to absolutism, even though they may at the very moment be worshipping constitutionalism—in name.

An interesting sidelight upon a phase of Southern history usually much exaggerated in public consciousness is thrown by

Mr. Edward Wilson James in Part 3 of Volume 5 of the *Lower Norfolk Virginia Antiquary*, which he edits. Thirty-seven pages of the number are devoted to a list of the property-owners of Princess Anne county, Virginia, in 1811. The county was quite typical of communities in which slaves were held, and the list shows that 568 persons held 2097 slaves. Only one person held as many as 28 slaves, and 380 held less than 4. There were 1010 landowners in the county, holding 156,743 acres. The largest landowner, holding a few more than 4000 acres, also held the largest number of slaves. The greater number of landowners, 960, owned less than 501 acres, and 810 owned less than 201 acres. Another interesting feature of the number is the record of the contract for the building of Eastern Shore Chapel, Princess Anne county, in 1754, a view of the chapel being published as the frontispiece.

The Mineral Industry During 1904. Prepared by the editorial staff of the *Engineering and Mining Journal*, under the supervision of Edward K. Judd. Publisher, the *Engineering and Mining Journal*, New York and London. Price \$5.00.

This is the thirteenth volume of the invaluable technical encyclopedia founded in 1892 by Richard P. Rothwell and incorporating the most recent developments and advances in the mining and metallurgical world. It embraces the latest statistics relating to the production and prices of the various minerals and metals throughout the world, and include exhaustive reviews compiled by authoritative international experts on the technical progress made in the metallurgical field. It appeals practically to the prospector, miner, merchant, investor, banker, manufacturer and legislator. The latest volume, in addition to its chapters on the various minerals, contains special chapters on the literature of ore deposits, progress in ore-dressing and coal-washing, kaolin, Alaska, the Klondike, Arizona, California, Nevada, Eastern States of Australia, Western Australia, the Transvaal, mining companies and stock exchanges and imports and exports of the United States, together with the Buyers' Manual and the Professional Directory. The contributors to the volume are L. H. Beason, W. P. Blake, W. D. Blatchley, T. H. Boorman, Alfred H. Brooks, C. C. Burger, A. Selwyn-Brown, J. H. Collins, W. R. Cochrane, W. R. Crane, George H. Cushing, James Douglas, C. T. Deane, L. W. Friedman, Stanley A. Easton, F. Lynwood Garrison, Charles H. Fulton, Erasmus Haworth, William D. Gillman, H. O. Hoffman, Frederick Hobart, J. P. Hutchins, H. C. Hoover, Alfred James, Walter R. Ingalls, S. F. Luty, J. F. Kemp, F. S. Mance, Jas. W. Malcolmson, J. O'Balaski, E. Morrison, T. A. Rickards, W. B. Phillips, C. E. L. Thomas, Robert H. Richards, W. Fisher Wilkinson, B. E. St. Charles, Dwight E. Woodridge, H. A. Wheeler and Jesse A. Zook.

The Implement Blue Book. 1906 edition. Publisher, Midland Publishing Co., St. Louis, Mo.

This complete and comprehensive agricultural-implement directory, which, because of simplicity and convenience, has become the favorite with the trade, has in this edition been carefully revised by experts who have noted all changes in names of firms, names of implements, etc., which they have been able to learn. Appendix A has been extended to include all manufacturers and their complete lines as each has responded, and Appendix B includes a complete list of all the branch houses, jobbing houses and transfer houses in the United States and Canada and of the factories represented by each. The Blue Book is a model of indexing.

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

THREAD OF ELECTRIC LINES.

Plans of the Tidewater Development Co. for the Birmingham District.

Regarding the plans of the Tidewater Development Co., in which he is interested, Mr. J. M. Dewberry of Birmingham, Ala., writes to the MANUFACTURERS' RECORD: "It is proposed to construct an electric trunk line railroad connecting the Birmingham district with tidewater transportation at Tuscaloosa on the Warrior river, also to operate a line of boats and barges on the river, thus affording the district the advantages of river transportation. The power plants will be suitably and economically located, and can furnish light and power to all points and adjacent territory along the line. By this plan the district can be threaded with electric freight lines connecting with this main line and extending to the various mines, furnaces, factories and other industries. While the passenger travel will not be neglected, and will be adequately provided for, yet the road will be essentially a heavy freight traffic line and will afford adequate facilities for freights of all kinds and classes. All classes of trade and industry will be benefited not only along the railroad from Gadsden to Tuscaloosa, but also the country adjacent to the river from Tuscaloosa to the Gulf. This large territory will be opened up and its great wealth developed."

It is proposed to carry the road through Attalla, Alabama City, Gadsden, Springville, East Lake, Woodlawn, Avondale, North Birmingham, Birmingham, Pratt City, Ensley, Bessemer and Tuscaloosa, which, with villages and intervening country, have an aggregate population of 200,000. Mr. Dewberry adds:

"The railroad will be about 100 miles in length, entirely in the rich mineral and commercial belt of the State, connecting with the Warrior river at Tuscaloosa and the Coosa river at Gadsden. The Warrior river will by the end of 1906 be open from Tuscaloosa to Mobile for nine months in the year. In about three years another lock will be completed which opens the river for the entire year. The Coosa river is now open from Gadsden, Ala., to Rome, Ga., and some distance beyond. From one end of the road to the other the grades are easy, no tunnels and but few small bridges."

The Kansas City Southern.

In his report for the last fiscal year President J. A. Edson of the Kansas City Southern Railway Co. estimates to the effect that in order to expand the business of the company to its legitimate proportions expenditures amounting to \$6,915,605.50 are necessary, divided as follows: Repairs and improvements to tracks, \$2,983,856; reinforcement and reconstruction of bridges, \$510,000; repairs and improvements to equipment, \$540,000; new tracks, \$388,000; new freight depot facilities, \$125,000; new water stations, \$65,000; new shop facilities, \$435,000; new telegraph, \$34,000; new fencing, \$180,000; work at Port Arthur, \$50,000; new equipment, including 12 consolidated engines, 8 switch engines and 1420 cars of various kinds, \$1,604,749.50. The belief is expressed that with the improvements and additions suggested, which will require two or three years to complete, the road will be able to handle expeditiously and economically all traffic which may be offered, and the gross earnings will show an increase of from 20 to 25 per cent. over the gross earnings of the past fiscal year. In that year the total earnings were \$6,

\$93,656, an increase over 1901 of \$2,140,590; the operating expenses \$5,088,356, an increase of \$1,689,135; net earnings \$1,805,299, an increase of \$451,455; deductions \$1,227,609, an increase of \$322,107. Between April 1, 1900, and June 30, 1905, there were spent for improvements and additions \$5,519,295.

SHREVEPORT TO HOMER.

Railroad Under Construction May Make the Connection.

Special correspondence of the MANUFACTURERS' RECORD from Shreveport, La., says:

"Arrangements are being made by the Shreveport Progressive League to submit as soon as possible to the taxpaying voters a proposition to give a bonus of \$75,000 to the Shreveport Northeastern Railroad Co., which proposes the building of a road from this city to Homer, La., the seat of Claiborne parish. It is proposed to raise this bonus by assessing a tax of seven-eighths mill for a period of 10 years. Work is being done on the road now in Webster parish, and if the agreement with the Progressive League is carried out the line will be finished within 30 months, and work will be started from here within six months. The company will maintain its shops and general offices here. A. K. Clingman is president of the railroad company, and other gentlemen well known in North Louisiana are interested with him. It is proposed to extend the road from Homer to Memphis, Tenn., later. The completion of the line from this city to Homer will be an important thing for Shreveport; in fact, business men say the road will be one of Shreveport's most valuable assets, in that it will place a large territory not now directly reached by rail in communication with this city. Public opinion appears to favor the tax levy for the bonus."

The Interurban Gulf Coast Plan.

The granting of a franchise by the general council of Mobile to H. Pillans and others to operate an electric railway on certain streets of Mobile is thought at Mobile to be connected with a plan for another interurban electric railway connecting New Orleans, Mobile and smaller towns along the Gulf coast. Col. J. T. Jones, identified with rise of Gulfport, is mentioned in connection with the reported plan for the road, which is expected to take in Gulfport, Bay St. Louis, Pass Christian, Biloxi, Scranton, Pascagoula, Moss Point and Coden. The plan contemplates the establishment of power-houses at different points along the line, with the largest at Gulfport, which will be headquarters.

To Build 560 Miles of Road.

Mr. M. J. Healy, general manager of the Texas, New Mexico & Pacific Railway Co., writes from McKinney, Texas, to the MANUFACTURERS' RECORD that construction will begin early this month. The company will build about 560 miles of railroad in Texas and New Mexico, and contract for 375 miles of it to the New Mexico line has been let to the Rock Island Construction Co. of Chicago, Ill. The officers of the company are Messrs. Jesse Shain, president; J. P. Crouch, vice-president; J. L. White, secretary and treasurer; J. L. Doggett, general attorney, and M. J. Healy, general manager.

N. & W. Double-Tracking.

Chief Engineer Charles S. Churchill of the Norfolk & Western Railway, Roanoke, Va., informs the MANUFACTURERS' RECORD, regarding contracts for double-tracking of the road, that contractors are already at work on three miles of road from Davy to Claren, W. Va., and on 10 miles

from Forest to Lowry, Va., and that work is about to be started on four and one-half miles or more to Iaeger, W. Va., and on 16.6 miles from Lowry to Montvale, Va. The double-tracking on all these sections will be on improved lines and grades.

Gulf & Ship Island.

In the last six months of 1905 the gross earnings of the Gulf & Ship Island Railroad Co. were \$904,587, an increase over the same period in 1904 of \$48,437. The operating expenses and taxes were \$669,569, a decrease of \$32,604. The net earnings were \$325,018, an increase of \$81,041; other income \$12,510, an increase of \$8889; total net income \$337,528, an increase of \$89,930; fixed charges and other deductions \$153,682, an increase of \$6215; surplus \$183,846, an increase of \$83,715.

Baton Rouge to Birmingham.

Residents of Mississippi, Alabama and Illinois are seeking to organize, with a capitalization of \$5,000,000, the Birmingham & Mississippi Southern Railway, to extend from Baton Rouge, La., to Birmingham, and to have its headquarters at Hattiesburg, Miss. The part of the line to be constructed first will be through a timber and coal region between Hattiesburg and Demopolis, Ala., a distance of 122 miles.

Arkansas Projects.

A charter has been granted at Little Rock to the Memphis & New Orleans Railway Co., a renewal of a charter granted two years ago for a line 169 miles long from Marion, Ark., to New Orleans, La., and one to the Central Railway Co. of Arkansas, which proposes to build a road from Dardanelle to Ola, and thence to Hot Springs, a distance of 70 miles, with a branch line to Waldron, a distance of 60 miles.

Railroad Notes.

The Atlantic & Birmingham Railway Co. is surveying a route between Warm Springs, Ga., and Atlanta.

The city council of Paris, Ky., has granted the Bluegrass Traction Co. a franchise to extend the terminal of its line at Paris.

Contract for the grading of a belt line a mile long at Hopkinsville, Ky., has been awarded by the Illinois Central Railroad Co.

The Gainesville Midland Railroad Co. is ready to begin work on new freight terminals at Athens, Ga., which will cost about \$200,000.

Actual construction between Oklahoma City, O. T., and Woodward of the Colorado, Oklahoma & New Orleans Railroad will begin within 60 days.

The Lauderdale & Northwestern Railway has been incorporated to build a line, principally for logging purposes, from Lauderdale to Kempers Springs, Miss.

The Hampton & Yorktown Railway Co. is seeking a franchise to use certain roads in Elizabeth City, Va., in the construction of a line connecting Hampton and Yorktown.

It is reported that arrangements have been completed for the immediate construction of the San Marcos Valley Interurban Railway between San Marcos and Luling, Texas.

It is announced that contract for 4000 additional freight cars to carry coal and 75 freight locomotives has been awarded by the Norfolk & Western Railway Co. to the American Locomotive Co.

An ordinance permitting the use of two important streets in Opelousas, La., by the Colorado Southern, New Orleans & Pacific Railroad Co. has made it possible

for the speedy completion of the road to Opelousas.

The gross earnings of the Northern Central Railway in 1905 showed an increase of \$357,400 over those of 1904. There was an increase of \$641,300 in the expenses, and net earnings showed a decrease of \$282,900 over those of 1904.

Contract has been let for the construction of 13 miles of the Kentucky Midland Railroad, which is to run from Madisonville, on the Louisville & Nashville, to Central City, on the Illinois Central. The contract is for construction from Central City toward Madisonville.

Mr. R. J. Graf, secretary of H. M. Byllesby & Co., Inc., Chicago, writes to the MANUFACTURERS' RECORD confirming the report that his company has obtained an option on the Jackson Railway, Light & Power Co. of Jackson, Tenn., and will entirely rebuild the property.

A report favorable to ordinances granting franchises to the Baltimore Terminal Co., representing the Washington, Baltimore & Annapolis Railway, and to the United Railways & Electric Co. for a joint use of German street, Baltimore, has been made to the second branch of the city council.

Messrs. E. F. Verdery and others of Augusta, Ga., and James U. Jackson of North Augusta, S. C., are seeking incorporation of the Augusta & Western Railway Co., which plans to build a railroad from Augusta to Elberton, Ga., about 70 miles. Two possible routes are under consideration.

The common council of Morgantown, W. Va., has granted a franchise to the Dunkard Valley Railroad Co., which plans to operate a trolley line 40 miles long between Mannington and Morgantown. The company has secured 95 per cent. of rights of way for the line, and expects to build with local capital largely.

Fayetteville, W. Va., will vote February 27 on the question of subscribing \$6000 to the capital stock of the Fayette & Fayetteville Railroad Co. This company, of which Mr. A. D. Roberts is president and Ben. D. Koonts is secretary, proposes to construct a railroad between Fayette, on the Chesapeake & Ohio Railway, and Fayetteville.

The report of the Louisiana & Arkansas Railway Co. for the six months ended December 31, 1905, shows gross earnings \$457,061, an increase of \$48,257; operating expenses \$282,708, an increase of \$34,141; net earnings \$174,353, an increase of \$14,106; net income \$181,755, an increase of \$4874, and surplus \$107,790, a decrease of \$991.

In their February bulletin Messrs. Fisk & Robinson, bankers, of New York, report that work is progressing upon the Kansas City Viaduct & Terminal Railway. The east and west piers for the bridge over the Kaw river are finished, and work on the center pier was recently concluded. The false work to be used in erecting the bridge is in process of construction. All the piles, upon which rest the concrete pedestals, have been driven, and more than one-half the pedestals are completed, with the work on the remainder progressing favorably. The work of erecting the steel superstructure is commenced, and will go forward as rapidly as weather conditions will permit.

Church Architects in Demand.

Church architects are invited to correspond with A. J. Cloyd of 409 Broadway, Knoxville, Tenn. Mr. Cloyd is interested in plans for the erection of a \$30,000 edifice of modern design, and wants to engage architects to prepare the plans and specifications.

LUMBER

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

A New Saving in Turpentine.

The recent experiments of the forest service, designed to conserve the life of turpentine trees, gives promise of remarkable success. It is believed that the improvements tested in these experiments will, in addition to prolonging the life of the trees, greatly increase their total yield of turpentine.

When the cup and gutter system of turpentine was introduced by the forest service some three years ago the economy which it secured led to its adoption on a large scale by Southern turpentine producers. What lends this system its great value is the fact that it does away with the old practice of "boxing," which consists in cutting a deep cavity or "box" at the base of the tree for the purpose of catching and holding the resin which flows from the chipped "face" of the tree trunk above. In place of the "box" an earthenware cup of the same capacity is fastened to the tree. To this the flowing resin is directed by means of metal gutters. The disuse of the "box" effected a twofold gain—first, a saving of the deep, fatal wound in the base of the tree, and consequently a conservation of its vitality, and second, much less waste in the gathering of the product, with a greater yield of turpentine and better grades of resin.

While this decided improvement spared the tree very considerably, the method of chipping "faces" to stimulate resin flow remained unchanged. This in itself necessitates a deep wound, which, it is believed, exhausts the vitality of the tree more than is necessary. Exhaustion is evident from the fact that after the first year the yield quickly falls off and the total productive period is also limited. A further step in advance, to supplement the gains already secured by the cup and gutter system, was therefore sought in the new plan. This aimed to reduce the size and number of "faces" chipped and also the depth of the chipping, without diminishing the flow of resin.

In the experiments carried out during the past season the first object was to show that at least an equal flow of resin can be secured from shallower and shorter "faces." The success of these experiments has tentatively established the practicability of this plan. A great saving naturally results, for by reducing the depth and the superficial extent of the wound the drain on the vitality of the tree is reduced and at least an equal yield is secured without discounting the product of future years. Under the old system the annual yield gradually falls off, largely in consequence of the formation of "dry-face," which is a kind of local death affecting the exposed wood of the tree.

It is highly probable that with this diminution in the severity of the operation the ordinary term of three or four years during which a forest is now worked can be greatly increased. This means not only a larger total return, and consequently larger profits, but also that the investment period for turpentine capital is lengthened, a fact which especially appeals to the investor.

The experiments are being conducted in co-operation with the Hillman-Sutherland Land Co., which last year placed four crops of trees of about 8000 trees each at the disposal of the forest service, and for the season of 1906 has consented to supply still more timber to further the study.

Appalachian Forest Preserve.

Mr. James H. Cutler, representing the American Forestry Association, has re-

cently visited a number of Southern cities in the interest of the Appalachian forest preserve and to arrange details for the proposed conference to be held at Charlotte, N. C., February 22. It is stated that invitations to the conference will be extended to the governors of the South Atlantic States that are interested in the Appalachian forests and to representatives of the milling, agricultural, power and navigation interests of these States. The object of the conference is to create a sentiment in favor of the preservation of the Appalachian forests and to aid in securing a State forester in North Carolina. The following committees have been appointed to arrange details for the conference: Reception committee, Messrs. Stuart W. Cramer, chairman; J. L. Chambers, A. H. Washburn, B. D. Heath and George B. Hiss; on invitation, Col. A. L. Smith, chairman; W. C. Dowd, J. P. Caldwell and C. C. Moore; on program, Messrs. C. B. Bryant, chairman; W. S. Lee, Jr., J. A. Solomons, M. Nisbet Latta and T. W. Wade; on finance, Messrs. Geo. Stephens, chairman; H. M. McAden, H. M. Victor and O. P. Heath, and on arrangements, Messrs. S. Wittowsky, chairman; D. A. Tompkins, E. R. Preston, McD. Watkins and Capt. A. Thies.

New Industry for Jackson.

A new industry which is in process of establishment at Jackson, Miss., and which should prove very profitable for its promoters by reason of the fact that raw material can be had comparatively cheap in almost unlimited quantities, is the Jackson Seating Co. It is proposed to organize the company with a capital stock of \$50,000 and buy out the business of the Southern Wood & Metal Furnishing Co., 203-4 Winter Building, Jackson. The plant of the new company, including factory, foundry and dry-kiln, will be modern in all particulars and equipped with improved labor-saving machinery for manufacturing school desks, opera chairs, seatings for all kinds of public buildings, parks, lawns, etc. In the distribution of its product the Southern Seating Co. will have the advantage of good transportation facilities and favorable freight rates. An organization committee for arranging details has been appointed as follows: Messrs. W. Q. Cole, J. C. Longstreet, Wirt Adams, A. H. Longino, Joseph Ascher, Thomas S. Brown and L. E. Davis.

Timber Tract Purchased.

Referring to current reports of the purchase of 17,000 acres of timber lands in Blount county, Tennessee, by Messrs. H. N. Camp and Thomas L. Prudent of Knoxville, Tenn., and associates, the MANUFACTURERS' RECORD is informed that the Great Smoky Land & Mineral Co., H. N. Camp, secretary and treasurer, Knoxville, Tenn., has purchased something more than 17,000 acres of timber land in Blount county which is said to contain iron ore and slate deposits. The property is located on the proposed line of the Knoxville & Augusta Railroad, which is now being graded and will be completed in June. No definite plans have been formulated for the development of the timber or mineral deposits on the property, but if it is not sold—negotiations for which are now in progress—the owners will probably develop it as soon as the railroad is constructed. The tract contains a variety of timber, including poplar, oak, ash, chestnut, cherry, birch, bird's-eye maple, spruce, white and yellow pine, etc.

January Building.

In many Southern and Southwestern cities the building record for January of this year shows a substantial increase of building operations over the corresponding

period last year, indicating that building activity during the present year will experience a decided forward movement. The valuation of building permits issued in Memphis, Tenn., during the month of January is estimated at \$553,431, an increase of \$331,464, or about 160 per cent. Permits issued in Nashville, Tenn., have an estimated value of \$753,044.50, as against an estimated value of permits issued in January, 1905, of \$334,306. In Kansas City, Mo., the value of building operations in January is estimated at \$631,410, an increase of \$311,160. The value of buildings for which permits were issued in Knoxville, Tenn., is placed at \$67,070, and for Louisville, Ky., \$377,873.

To Erect Mahogany Mill.

Messrs. Markley, Miller & Co., representing American concessionaries from the Mexican government of franchises in the States of Campeche, Chiapas and Tabasco, Mexico, and operating a steamer between Mobile, Ala., and Mexican ports in the mahogany import trade, have secured a site on the east side of the Mobile river at Mobile, Ala., and will erect a large mahogany saw-mill. It is stated that foundations for the plant are being laid and machinery has been ordered. The plant is designed to meet the necessity of prompt shipment of mahogany boards and flitches from Mobile, and will probably be in operation within the next three months, employing from 50 to 75 men. Mr. Sewell Harrison is the Mobile agent of the firm.

Correspondence Solicited.

The New South Plow Co. of Columbus, Miss., writes the MANUFACTURERS' RECORD that it contemplates installing machinery for the manufacture of such small articles as can be made from the blocks and strips and other waste material from the woodworking department of its plow-manufacturing plant. With a view to the establishment of an outlet for this product, the company desires to communicate with jobbers and handlers of toothpicks and articles of like character which are made from white oak and other hardwoods.

Purchases Saw-Mill.

The Carter Lumber Co., with J. Press Carter, president, has been organized at Houston, Texas, for the purpose of operating the McConnico mill in Angelina county. The company is capitalized at \$50,000, and is making active preparations for the improvement of the plant, which has already been purchased. In addition to the mill property and timber holdings of the McConnico mill, the company has recently purchased 7000 acres of good timber, which will also be developed.

Big Timber Purchase.

Senator W. H. Hatten of New London, Wis., is reported to have purchased the entire timber holdings and mill properties, etc., of the Gulf Coast Lumber Co. of Lyman, Miss., with offices at Gulfport and Havana, for a consideration of \$700,000. The property contains a large amount of long-leaf yellow-pine timber, which, it is said, will cut about 380,000,000 feet. The transfer includes, beside the timber, mills, log roads, engines, cars, cattle, etc.

Hardwood Lumber Association.

At a meeting of the Lumbermen's Club of Memphis, Tenn., last week the following committee to arrange for the entertainment of delegates to the meeting of the National Hardwood Lumber Association, which will be held in Memphis on May 3 and 4, was appointed: R. J. Darnell, chairman; W. S. Darnell, F. E. Gary, S. B. Anderson, George C. Ehemann.

Naval-Stores Company.

Application has been made for a charter for the Atlantic Naval Stores Co. of Jacksonville, Fla., with a capital stock of \$50,000, for the purpose of manufacturing and dealing in naval stores, etc. The officers and directors of the company are Messrs. Henry Elson, president; H. E. Pritchett and P. D. Cassidy, vice-presidents; A. G. Hartridge, treasurer, and A. W. Krauss, secretary.

To Locate Spoke Factory.

Mr. N. A. Anderson of Pine Bluff, Ark., is making active preparations for the location of his proposed spoke factory at Pine Bluff. The factory will occupy the site of the old plant of the St. Louis Stave & Spoke Co., and will be erected as soon as material arrives. The operating company will be known as the Dixie Spoke Co.

Oak Lumber Wanted.

The Sanford Manufacturing Co. of Sanford, N. C., writes the MANUFACTURERS' RECORD that it wants to purchase red and white oak lumber 4x4. The company will take the cut of a mill with mill culls omitted and send its own inspector to inspect at the mill.

Lumber Notes.

Mr. H. H. Luckett of Batesville, Ark., has closed negotiations for the purchase of 40,000 cedar fenceposts.

During the month of January 240 permits were issued in Atlanta, Ga., for buildings valued at \$299,623, an increase over January, 1905, of \$155,918, or more than 100 per cent.

Senator Patteson of Buckingham county, Virginia, has presented a bill in the legislature requiring that the science of forestry shall be taught in the schools of the State. The bill particularly designates the University of Virginia, Virginia Polytechnic Institute and the public schools.

The executive committee of the North Carolina Pine Association has appointed May 14 and 15 as the dates for holding the next annual convention of the association at the Monticello Hotel, Norfolk, Va. The association's membership includes lumber interests of the two Carolinas, Maryland and Virginia.

Pottery for Louisville.

The industrial interests of Louisville, Ky., will soon be added to by the establishment of a plant for the manufacture of jugs, flower pots and other rough pottery products of that character. The new enterprise is being promoted by Albert B. Head of Paducah, Ky., who will organize a company to be known as the Louisville Pottery Works, with a capital stock of \$100,000. A site has been obtained on the Louisville & Nashville Railway, in the suburbs of Louisville, and plans and specifications for the plant will soon be prepared. Messrs. Samuel Windote of Cincinnati, Ohio, and William Troust of Louisville will be among the stockholders of the corporation, and officers are to be elected this week.

Leading men of Bristol, Va.-Tenn., have organized a Business Men's Association with Mr. F. T. Blanchard, president; Mr. C. L. Hedrick, vice-president, and Mr. W. O. Green, temporary secretary, it being understood that the position of secretary is ultimately to be filled by some one on a salary who will devote his whole time to the work. The officers are, ex-officio, members of the board of directors, which include Messrs. H. E. Jones, H. P. King, George S. McNeil, W. J. Carmack, E. J. Crymble, J. D. Mitchell, C. M. Brown, Clyde Reser and J. P. Hammer.

TEXTILES

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the MANUFACTURERS' RECORD. We shall be glad to have such matter at all times, and also to have any general discussion relating to cotton matters.

To Promote a Silk Industry.

Some weeks ago the MANUFACTURERS' RECORD referred to reports from Beaumont, Texas, that experienced Japanese intended to establish a silk industry at Beaumont. Further particulars are given in a dispatch from Beaumont, which says that an old store building has been leased by Messrs. M. Asai and H. Otsuki, representing a company of Japanese, who will establish a silkworm industry.

Mr. Otsuki was mentioned some time ago as having become interested in the development of a silkworm farm in Orange county, while M. Asai is a Japanese capitalist, with headquarters at Houston.

The plan of establishing the silkworm farm in Orange county has been abandoned, as the promoters will be able to secure all the mulberry leaves needed from trees already growing in this vicinity, and it has been decided to culture the worms in this city. M. Asai's method is to gather a large amount of cane and rice straw and construct frames upon which the worms will live while weaving the cocoons from which the silk fiber is obtained.

The company has ordered from Japan the machinery to be used in separating the silk fiber from the cocoons, weaving it into the thread and then into the various manufactured articles. It is expected that his machinery will arrive here during the month of March.

Mr. Otsuki is provided with about 50,000 worms, which will be the basis for beginning the industry, and as the worms multiply very rapidly, it is the purpose to largely extend the business within a year.

The Japanese state that climatic conditions are similar here to those in the silk-growing region of Japan, and they are confident of success in their venture, which marks the beginning of an entirely new industry in this section of Texas.

Cotton Warehousing.

President R. T. Milner of the Texas Cotton Association is quoted to the effect that Texas lost to the amount of 100,000 bales of cotton last year through exposure of the cotton in open yards. All of this, as Mr. Milner points out, might have been saved had the bales been in warehouses, where, with proper provisions for safety, not only would the actual loss have been prevented, but the owners would have had an easy basis for financial transactions. The situation in Texas last year was not unique for Texas or for that year. The cotton belt generally has suffered in the past such loss to an enormous amount, and that will continue until an adequate warehousing system is in operation. A number of definite plans in that direction have already been made, and typical of them is that of the Warrant Warehouse Co. of Birmingham, Ala., of which Mr. W. D. Nesbitt is president. Its warehouses are planned to be accessible by five railroads, and constructed of steel reinforced concrete, equipped throughout with automatic fire sprinklers, to guarantee an exceedingly low rate of insurance. The negotiable receipts for the cotton thus stored are excellent collateral, especially as they may be registered with and guaranteed by the Guarantee Trust & Surety

Co. of Birmingham. The plan is one of benefit to planters, to the mills and to local merchants.

The Raeford Company's Plans.

Some time ago the MANUFACTURERS' RECORD referred to the plans of the Raeford Power & Manufacturing Co. of Raeford, N. C., which had been organized to develop water-powers and manufacture cotton goods. The company is now planning for the active beginning of construction work at Big Rockfish creek (where it owns a valuable water-power) of a cotton mill which will be equipped with 5000 producing spindles for the manufacture of coarse yarns. Steam-power will be used for this mill, and about 3000 bales of cotton will be consumed annually. After this mill is completed it is the company's intention to develop the water-power and transmit the energy by electricity for operating the mill mentioned, and a second mill will then be erected. The equipment of the second mill will be determined later. T. B. Upchurch is president of the company and W. D. McNeil of Fayetteville, N. C., has been chosen general manager to proceed at once with the construction work.

The Laurel Cotton Mills.

The Laurel Cotton Mills of Laurel, Miss., has awarded contract to the Jefferson Construction Co. of Birmingham, Ala., at \$22,764 for the erection of an additional mill building. The new structure will be two stories high, 75 feet wide by 164 feet long, of modern design and construction, and will be equipped with 10,400 ring spindles and preparatory machinery. This increase will double the company's present spindleage and permit all the 640 looms now in position to be operated without the necessity of night work by the operatives. The new building is to be completed by July 1. The new textile machinery will be accompanied by a 300-horse-power engine direct connected to a 250-kilowatt generator, and electricity will be distributed throughout the plant for driving purposes. The total expenditure for these improvements will amount to about \$125,000. The MANUFACTURERS' RECORD stated in December that the Laurel Cotton Mills had decided to double its plant.

Camel's-Hair Yarn Mill.

Two weeks ago the MANUFACTURERS' RECORD referred at some length to the American Press Cloth Co. of Columbia, S. C., and mentioned that that company is to build a mill for manufacturing the yarns used in its press-cloth mill. The details of this plant are now being considered, and about \$100,000 will be invested in the addition. A two-story building 60x200 feet in size will be erected and equipped with 1300 spindles and other accompanying apparatus for the production of camel's-hair and other varieties of yarns of a similar character for consumption by the company's looms, which are weaving press-cloth for oil mills. The daily output of yarn will be from 1200 to 1500 pounds. Contracts for machinery have not been signed, but are now being given attention.

Pacolet Mill No. 5.

Rapid progress is reported on the construction of Pacolet Mill No. 5 at Pacolet, S. C. This plant is to contain when completed 27,000 spindles and 1000 looms from the Draper Company of Hopedale, Mass. The main building, three stories high, 107x400 feet, has reached the first story, and is expected to be completed in a couple of months. Messrs. Lockwood, Greene & Co. of Boston, Mass., are the architects-engineers in charge, and Messrs.

G. H. Cutting & Co. of Worcester, Mass., are the contractors for the building. The Pacolet Manufacturing Co., Victor Montgomery of Spartanburg, S. C., president, owns the plant. This company was referred to in December as having resumed paying semiannual dividends of 5 per cent.

Consolidated Cotton Duck Co.

It is announced that the Consolidated Cotton Duck Co. of Baltimore has purchased the J. Spencer Turner Company, which has its main offices in New York and branches throughout the United States, Canada and England. This latter company is a selling organization for cotton goods, and the Consolidated Company has purchased it so that it will not have to depend upon agents outside of its control for the sale of its product. Six per cent. debentures will be issued by the Turner Company and be guaranteed by the Consolidated Company. T. M. Turner, president, and Herbert H. Lehman, treasurer, will continue to retain these offices under the new ownership.

The Yadkin Knitting Mills.

The Yadkin Knitting Mills of Lexington, N. C., has begun the erection of buildings for its plant, which will contain 25 knitting machines and complement of sewing machines, electric power apparatus, etc., for the production of hosiery. Dyeing and finishing departments will be operated also. This company organized some time ago with J. D. Grimes, president; F. N. Patterson, treasurer, and K. Alexander, superintendent. Its capital stock is \$10,000.

Want Knitting Machinery.

The MANUFACTURERS' RECORD is advised by J. H. Reynolds of Bristol, Tenn., that he wants to correspond with manufacturers of machinery for knitting underwear and hosiery. Presumably Mr. Reynolds contemplates establishing a knitting mill.

J. L. Cromer of Rhodhiss, N. C., writes that he wants descriptions and prices of machinery for manufacturing hosiery. He evidently contemplates establishing a knitting plant.

Concord's New Mill.

Preparations are being made at Concord, N. C., to put in operation the plant of the Brown Manufacturing Co., which has been under construction and is now about completed. The company has built a mill of 7600 ring spindles and 200 looms, using electric power for the manufacture of three-yard sheetings. It is capitalized at \$100,000, and C. W. Johnston is president; E. F. White, treasurer; A. H. Harwell, superintendent.

A \$50,000 Hosiery Company.

Mr. A. C. Johnson of Spartanburg, S. C., has organized the McMillan Hosiery Co., with capital stock of \$50,000, for the purpose of manufacturing hosiery. The mill will be located at McMillans Mills, south of Fingerville, S. C., on North Pacolet river. A water-power will be developed to furnish electricity, which will be transmitted for operating the new plant. Construction work is to begin soon.

Loudon Hosiery Mills.

Articles of incorporation have been filed for the Loudon Hosiery Mills of Loudon, Tenn., with capital stock of \$20,000, for manufacturing hosiery. The incorporators are Messrs. R. H. Bell, W. H. Harrison, C. J. Blair, M. R. Goans, C. P. Taliaferro, A. W. Ward and C. H. Bacon.

For Manufacturing Jute Bagging.

J. P. Dellinger, Cherryville, N. C., evidently contemplates establishing a jute-

bagging manufactory, as he has addressed the MANUFACTURERS' RECORD asking for information and prices on machinery needed in that class of industry. Mr. Dellinger not only wants to make new bagging, but to rework old material, and invites estimates on complete plant.

Installing New Looms.

An important improvement is being undertaken by the Spartan Mills of Spartanburg, S. C. The company finds it advisable to replace some 700 old plain looms, and has awarded contract for that number of new weaving machines. The new looms will be of the Northrop pattern, built by the Draper Company of Hopedale, Mass.

A \$25,000 Knitting Mill.

A knitting mill will be established at Selma, N. C., by M. C. Winston and associates of that city. They intend to capitalize the enterprise at \$25,000, and will be in the market for the entire equipment of machinery needed.

Wants Cotton-Rope Machinery.

Messrs. Pope & Sawyer of Marshall, Texas, contemplate establishing a plant for the manufacture of cotton rope and twine. They are prepared to correspond with manufacturers of the machinery needed.

Textile Notes.

It is reported that the Poulan (Ga.) Cotton Mills will probably be enlarged during 1906. There are 5000 spindles and 160 looms in the plant.

The Commercial Club of Paducah, Ky., has received a proposition from Boston (Mass.) capitalists for the organization of a \$250,000 stock company to build a cotton mill.

The Mulberry Commercial Club has been organized at Mulberry, Ark., and its members are planning the organization of a stock company to build a cotton mill. D. M. McGehee is secretary of the club.

Messrs. Amson Mohr, George E. Cope and William S. Daffin have incorporated the American Bag Manufacturing Co., with capital stock of \$10,000 and privilege of increasing to \$250,000, for the purpose of manufacturing bags and other similar goods. The enterprise is domiciled at Savannah, Ga.

It is currently reported that Messrs. J. E. Douglass and W. H. Coyle of Guthrie, O. T., are investigating the cotton mills of the South with a view to building a plant in their city. They are said to be visiting the mill sections of the Carolinas and Georgia with the purpose of determining what character of product it would be best to manufacture.

To Develop 26,000 Horse-Power.

It is stated that Messrs. Hugh MacRae & Co. of Wilmington, N. C., have decided to begin in the near future the construction work required in the development of the Bluff Falls water-power on the Pee Dee river, 12 miles from Lilesville, N. C. Estimates have placed the possible development at 26,000 horse-power, and it is understood that it will require two years to build the required dam. The purpose is, of course, to transmit this power by electricity to the various manufacturing industries in the territory around Lilesville. Messrs. Lockwood, Greene & Co. of Boston, Mass., are understood to have been engaged as engineers in charge of this work.

The Clinton (La.) Progressive League has elected Messrs. George J. Woodside, president; Dr. E. L. Irwin, vice-president; W. H. Bennett, secretary; H. H. Forrester, treasurer.

COTTONSEED

Cottonseed Market.

[Special Cor. Manufacturers' Record.]

Atlanta, Ga., February 3.

The price of cottonseed is far too high for the cottonseed crusher to make a fair margin of profit. It was hoped that after the season had fairly commenced seed would decline, but it is today firm at from \$18 to \$20 in the Atlantic States section, and \$21.50 in the Mississippi district. There are mills, however, which have been obtaining seed until quite recently as low as \$10 in Uniontown, the Selma district of Alabama. The price of seed, it will be seen, therefore, varies considerably according to location. It would appear, however, that with organized action these fluctuations could be controlled and avoided, and seed prices fixed on a reasonable basis at which the cottonseed-oil mills would be assured of better returns in the matter of profit in their business than have hitherto been obtained during the present season.

The oil mills should pay the farmer for his seed a price which will enable him to dispose of his seed and with the returns purchase sufficient fertilizer in the form of cottonseed meal for his requirements. With this as a basis of doing business a very different condition of affairs in the cottonseed-crushing business would prevail, as distinct from those which now exist. Manufacturing lines dependent for their crude supplies in other products are largely guided in their purchasing operation by this logical principle. I am pleased to observe an independent step has been taken in this direction by Mr. J. L. Benton, secretary of the Monticello Cotton Oil Co., Monticello, Ga., and secretary of the Cottonseed Crushers' Association of Georgia. He has written from Monticello to each of the oil mills in Georgia as follows:

"For some time past the price of seed has been entirely too high for the profitable operation of a mill. I find that a great number of the mills are sending out \$18 quotations, and they are sticking to the above price. I am firmly convinced that if you will assist by sending out the same quotation (\$18) you will have the co-operation of every mill in your territory. If you will do this immediately I firmly believe that you will see the price of seed decline to a profitable basis."

We trust the oil mills will accept Mr. Benton's suggestion and honestly carry it out. Their own interests and those of the entire cottonseed business to an important extent depends upon concerted and legitimate action of this character.

Prime crude oil f. o. b. oil mills in the Atlanta section in buyers' tanks closed barely steady today at 25 cents per gallon, while for summer yellow in New York, February shipment, 31¼ cents asked, and 32¼ cents for September delivery. The New York market is firmer. Cake and meal are in good request at firm prices, New Orleans price being \$28.50 per ton, February shipment. JOHN BANNON.

Cottonseed-Oil Refinery.

At a meeting of the stockholders of the Farmers' Oil & Fertilizer Co. at Dawson, Ga., a committee was appointed to make a thorough investigation as to the feasibility of erecting a cottonseed-oil refinery on an extensive scale. It is the general impression among those interested in the enterprise that the refinery will be established, and if so, the capital stock of the Farmers' Oil & Fertilizer Co. will be increased from \$35,000 to \$70,000 for the purpose. Mr. J. H. Fulford is the superintendent of the Farmers' Oil & Fertilizer Co.

Interstate Cottonseed Crushers.

The executive committee of the Interstate Cottonseed Crushers' Association at its New Orleans meeting last week selected Atlanta, Ga., as the place for the annual meeting May 15-17 next. Messrs. Joseph W. Allison of Ennis, Texas; L. A. Ransom of Atlanta, Ga.; Fielding Wallace of Augusta, Ga., and J. C. Hamilton of Baton Rouge, La., were appointed a committee to visit Washington, D. C., for the furtherance of legislation in aid of the cottonseed industry.

Progress in San Angelo.

[Special Cor. Manufacturers' Record.]

San Angelo Business Club,

San Angelo, Texas, February 2.

There is no apparent evidence that the industrial activity prevailing here will diminish in the near future. It is interesting to refer to some of the improvements now planned, under construction and nearing completion. Those being completed include a two-story brick business building and a one-story brick business building, to cost \$7000 and \$3000, respectively, for W. B. Turner; a two-story brick business building to cost about \$5000 for T. H. McCloskey; a one-story concrete business building to cost about \$3000 for J. B. Coleman; a two-story brick addition to city public school to cost about \$20,000; a three-story brick business building to cost about \$30,000 for U. G. Taylor. The enterprises to be erected soon include John Freeland's two-story business building to cost \$5000; the San Antonio Ice & Power Co.'s \$15,000 enlargement, increasing ice-making capacity to 75 tons daily, and the ice plant of J. T. Neal and W. D. Fuller, to cost about \$10,000. The new projects practically assured include a brick opera-house to cost \$30,000, in which Charles Hobbs is interested; a brick edifice for the Baptist church to cost about \$20,000, and two other congregations contemplate erecting brick buildings. W. C. Nixon, general manager of the Gulf, Colorado & Santa Fe Railway, with offices at Galveston, has promised to begin soon the erection of a \$15,000 brick depot in this city. J. A. THOMAS, Secretary.

Wants Steel-Plant Location.

Manufacturers seeking suitable locations for manufacturing plants are continually writing to the MANUFACTURERS' RECORD requesting information regarding sites. The latest enterprise writing in this way is the Baldwin Steel Co., manufacturer of high-grade crucible steels, No. 107 John street, New York. The company now has works at Cold Spring-on-Hudson, N. Y., and contemplates building its new mill in the gas fields of West Virginia. Correspondence from that section and other parts of the South which may claim eligibility as suitable locations for the enterprise are invited by the company.

Farmers' Fertilizer Factory.

The Georgia division of the Farmers' Co-operative and Educational Union at a meeting at Atlanta, Ga., on Thursday of last week definitely decided to erect a fertilizer factory in Georgia. A committee of five, with Nicholas Halliday of Forsyth county, chairman, was appointed to investigate the matter and report to the Union at its next meeting, to be held at Atlanta on May 2. It is stated that in selecting a site for the factory particular consideration will be given to localities offering the best railroad facilities. About \$150,000 will be expended in establishing the enterprise.

During January 10,990 tons of Peace River phosphate rock were shipped through Punta Gorda, Fla., to domestic points.

MINING

Coal Lands Sold.

Negotiations for the sale of 8000 acres of coal lands in Monongalia county, West Virginia, have been consummated by R. W. Dawson of Uniontown, Pa. It is stated that the property was purchased for a consideration of \$800,000 from Messrs. M. H. Bowman, William Allison, P. A. Johns, R. W. Higginbotham and associates, all of Uniontown. The Davis Coal & Coke Co. of New York city and Davis, W. Va., is reported to be the purchaser.

The Sterling Coal & Coke Co. has been organized and will be incorporated, with a capital stock of \$500,000, for the purpose of developing the Sterling tract of 452 acres of coal lands located along the Monongahela river near Masontown, W. Va., which the company has purchased for a consideration of about \$550,000. It is stated that the coal on the property is found at a depth of 150 feet and will be mined from a shaft. The Sterling Coal & Coke Co. intends to construct 300 coke ovens at present and increase the number to 500 later. Preliminary surveys are being made by a corps of engineers from the office of Messrs. Hogg & Porter. Temporary officers of the Sterling Coal & Coke Co. are W. C. Magee of Pittsburgh, Pa., president; George Whyel, vice-president and general manager, and I. W. Semans, treasurer.

West Virginia's Coal.

Chief Mine Inspector James W. Paul of West Virginia has issued a report showing that the coal production of the State during 1905 was a decided increase over that of any previous year. The total output in tons of 2240 pounds is estimated at 31,350,029, the names of the several districts and the production of each following: Potomac district, 1,633,517 tons; Monongahela district, 7,867,931 tons; Wheeling district, 714,250 tons; Kanawha-New River district, 11,034,257 tons; Norfolk & Western district, 10,073,074 tons. The report shows that during 1905 about 50,000 men were employed inside and outside the mines in both the coal and coke industries. This is a gain of several thousand, and is explained by the fact that 40 or 50 new mines were opened during the year.

Graphite-Mining Plant.

For the development of graphite deposits in the vicinity of Newton, Catawba county, North Carolina, it is stated that the Southern Engineering Co. of Phoenix, Ariz., and Galeson, Pa., is making arrangements for the establishment and operation of an extensive mining, milling and refining plant at Newton. It is reported that the quality of the deposit is very good, and will doubtless produce a profitable yield. Officers and incorporators of the Southern Engineering Co. are Messrs. E. A. Gammage, Chicago, Ill., president; W. J. Rouse, Cross Fork, Pa., secretary; E. Pelts, N. Baughman, T. S. Deitz and J. P. Williams, all of Cross Fork, Pa.

Company Elects Officers.

At a recent meeting of the Consolidated Fuel Co. of Bluefield, W. Va., William E. Fowler was elected president; H. Archer Mitchell, secretary-treasurer, and S. S. Cofer, general manager. Mr. Fowler is president of the American National Bank of Bluefield, and is identified with other enterprises in that city. Mr. Mitchell is regarded as one of the progressive young men of the city. Mr. Cofer is one of the best-known coal men of the fields, and has had several years' experience in coal-mining.

During January of this year coal exports from Baltimore, Md., amounted to

30,013 tons, as compared with 24,617 tons for the corresponding month of 1905. With the exception of a small quantity exported to Jamaica and one cargo to Cuba, both amounting to 3520 tons, the remainder went to Mexico.

FOREIGN LETTERS

The MANUFACTURERS' RECORD is so widely read in foreign countries that we are in constant receipt of many letters from all parts of the world. Some of these letters indicate the disposition of foreigners to buy American goods, and are therefore of interest to our readers.

On Demand in Smyrna.

Avedikian Bros., Smyrna, Asiatic Turkey:

"For many years we have had in connection with our firm a special department devoted exclusively to the introduction and sale of American articles of every description. We are continually investigating American products for the purpose of introducing them successfully in this part of the world."

The firm is specially interested in American cotton piece-goods, cotton hose, oleo oils, glucose, rum, petroleum, leathers, hardware, lamp goods, soaps, jewelry and agricultural implements. Smyrna has a population of 300,000, with a street-car system, gaslight and water works, and it is the terminus of 1500 miles of railroad. It has no factories, but is the port of entry and principal market for 15,000,000 persons in Asia Minor, and the value of its average yearly imports is \$16,000,000.

Trade With Nicaragua.

Mr. Charles F. Abbott, 320 Hennen Building, New Orleans, La., manager of the New Orleans division of Messrs. J. A. & W. Bird & Co. of Boston, Mass., writes that he has received a letter from Victor Maru of Bluefields, Nicaragua, asking for information and catalogues on pianos, steel ceilings, wagons and carriages, ladies' dresses, soap and soap stock, furniture, etc. Mr. Maru desires this data, as he intends to take up the sale of similar products in his country, and therefore wants to correspond with manufacturers desiring representation in Nicaragua.

Milan Exhibition.

I. E. Macchi of Milan, Italy, writes to the MANUFACTURERS' RECORD calling attention to the international exhibition in that city as an opportunity for American exporters to develop their trade with Italy.

Manufacturers Interested.

Manifestations of practical interest on the part of manufacturers of the country in the Southern Exposition of Atlanta in 1910 are increasing. Mention has already been made of the Lane & Bodley Company to furnish all the power necessary for the exposition, and Mr. W. R. Jennison, through whom the offer was made, has now made an offer for the Harrison Safety Boiler Works of Philadelphia to furnish 10,000 horse-power heaters or such additional horse-power as may be needed for a working exhibit. The offer has drawn from Mr. Walter G. Cooper, secretary of the Atlanta Chamber of Commerce, a letter telling Mr. Jennison that the offers he has been instrumental in securing for the exposition will not only encourage Atlantans in their efforts to raise exposition funds on a large scale, but will have a fine effect upon the whole country by showing the high appreciation which the manufacturers have in the type of exposition proposed for Atlanta.

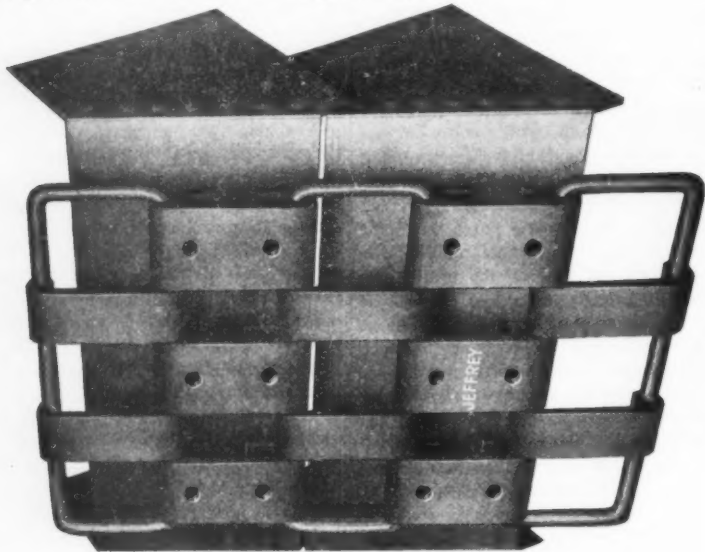
The Chamber of Commerce of Chattanooga plans to organize within itself a board of trade.

MECHANICAL

The "Patnoe" Chain.

A special chain is being introduced by the Jeffrey Manufacturing Co. of Columbus, Ohio, to be known as the "Patnoe" Stone Elevator Chain.

Its strength and wearing qualities will be evident at a glance. This new simple yet powerful chain is made of wrought

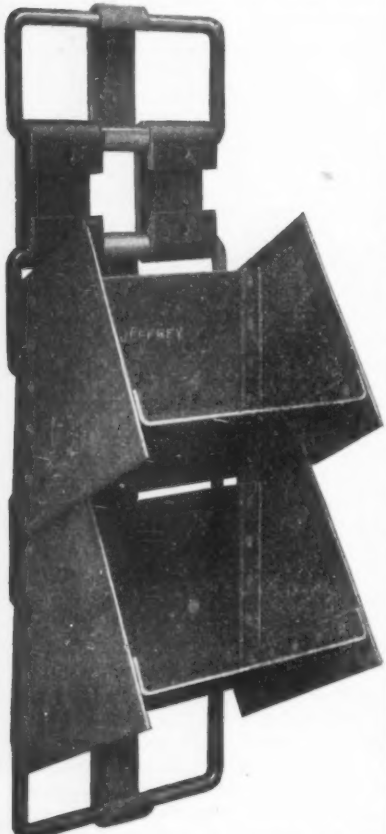


"PATNOE" STONE ELEVATOR CHAIN.

steel carefully welded, while every link is brought to a perfect pitch. The carrying links are of substantial design and of a strength to make them practically unbreakable.

This type of chain is made up in single, double and triple units, the double and triple units being shown in two accompanying illustrations.

Its strength and large wearing surface



"PATNOE" STONE ELEVATOR CHAIN.

(which in the double unit is 12 inches and in the triple 18 inches) make it a chain which in the handling of broken stone will with ordinary care last for a period anywhere between two and five years. Its carrying capacity is enormous. The double-unit chain, with 12 inches wearing surface, carries a bucket anywhere from

18 to 24 inches in length, while the triple unit will carry a bucket 26 and 36 inches in length.

In the illustration the double-unit bucket, which is 25 inches in length and 10 inches projection, gives a capacity of 150 tons of broken stone per hour; the triple unit, which has a bucket 36 inches in length and 14 inches projection, gives a capacity of 300 tons of broken stone hourly.

With ordinary care this type of elevator can be run almost continuously without perceptible wear. It operates over special adjustable sprocket wheels at the head. It is not offered as a cheap outfit. On the contrary, it is recommended more especially to those who appreciate the value of machinery capable of constant work and heavy service under any emergency. It is made in various sizes to suit the conditions. The manufacturer, the Jeffrey Manufacturing Co., will send specifications to interested inquirers.

Test of a Gasoline Electric Car.

In sparsely-settled districts, where the cost of maintenance of a steam-drawn train is prohibitive and the investment of capital for an electric service uncalled for, there has arisen a need for a self-contained car which shall be independent of a feeder system and at the same time be cheaper to operate than the ordinary locomotive and train. For this purpose the General Electric Co., in conjunction with the American Locomotive Works at Schenectady, N. Y., has recently completed an experimental gasoline-electric car which presents many features of interest as a proposed solution for this go-between.

The first trial run of this car took place February 3, when a successful trip was made from Schenectady to Saratoga, N. Y., and return over the lines of the Delaware & Hudson Railroad. During the trip several important features of this method of driving were demonstrated. While the car was not designed for high speed, the average running time was about 35 miles an hour, and several times the car attained a speed of 40 miles an hour. The smooth and rapid acceleration were most favorably commented upon by the engineers present, as well as the complete absence of vibration which might be thought to accompany the use of a gasoline engine.

This car consists essentially of a gasoline-driven electric generator furnishing current to electric motors geared to the driving wheels and controlled by a method similar to that employed in the ordinary straight electric-car equipment. The car in question is of the combination type, comprising a passenger compartment, smoking-room, a baggage-room, engine-

room, one toilet and a motorman's compartment. A complete controller equipment is located at each end, the forward controller being located in the engine-room, while the rear compartment is self-contained. The car has seating capacity for 40 passengers, including seats for 12 in the smoking-room. In general it is built on the lines of a standard passenger coach. Gould pattern bumpers and draw-bars are provided.

The gasoline engine for this car was built by the Wolseley Tool & Motor Car Co., Ltd., of Birmingham, England, and is considered the most powerful unit yet constructed for this class of work; it develops 160 B. H. P. when running at 450 R. P. M. The cylinders are horizontal, six in number, and arranged in three pairs, the two cranks forming a pair being at an angle of 180 degrees. All valves are mechanically operated, and the cylinders are water-cooled. Hitherto difficulty has been experienced in starting internal combustion engines of this size, but in the present case this has been entirely overcome by using shells filled with black powder to provide the initial charge in one cylinder. On starting the engine the shell is fired by a hand trigger, the whole being similar to the breech mechanism of a gun. Jump sparks and low-tension ignition are both provided, current being furnished to the latter by a small magneto driven from the engine shaft.

The volatilization of the liquid fuel is produced in two carburetors, which form an integral part of the engine. Each carburetor supplies three cylinders and is equipped with two float feed chambers. The chambers are identical, and are of the usual needle-valve type. Very flexible arrangements are provided to govern the air supply, so that it may be taken from the atmosphere or from the crank chamber, or from both, according to the conditions required. The mixture is heated to the required temperature in a small chamber which itself is warmed by the exhaust. In all details the engine is complete. The lubrication is especially so, being force feed for main bearings and pistons and drip feed for all other working parts. Gasoline is stored in steel tanks beneath the car, and the burnt gases pass through the roof into mufflers, from which they exhaust into the air. The cooling system for the cylinders consists of radiating tubes, one located on the top of the car. Water for cooling is contained in the engine base. For heating the car a three-way cock is provided, which bypasses circulating water through the usual pipe-heating system within the car.

The main electrical current is furnished by a 120-kilowatt direct-connected General Electric six-pole unit, designated for 600 volts. This generator is provided with commutating poles, which, in connection with the method of voltage control, permits a very flexible operating system. The advantage of commutating poles is evident when it is considered that the field excitation at starting is weak, and the large current at low voltage is required to give the necessary torque. Owing to the peculiar operating conditions of this system, the generator, while retaining the characteristics of a shunt-wound machine, is separately excited by a five-and-one-half-kilowatt two-pole compound-wound exciter working at 110 volts. This is located on top of the generator, and is driven by a Morse silent chain.

There are two GE-69 motors of standard railway construction.

For regulating the speed of the motors, as mentioned above, voltage control has been adopted; in other words, the speed of the car is governed by varying the field strength of the generator. With this method the speed of the engine remains

constant after acceleration. The controller is semiautomatic, and can be set for any predetermined maximum acceleration. It is arranged for series parallel control, the motor connections being changed from series to parallel by the reversing handle. This latter has five positions—"series ahead," "parallel ahead," "off," "series reverse" and "parallel reverse." Arrangements are provided to prevent the motor connections from being changed from series to parallel until the resistance is put in the field circuit of the generator.

Further operating details comprise a General Electric combination straight and automatic air-brake equipment and a special lighting equipment. The headlights are supplied with 100-candle-power incandescent lamps of the stereopticon type, one for each end of the car.

The trial trip demonstrated the practicability of this car equipment, and was entirely satisfactory to the engineers of both companies. The opinion was expressed that this was merely a step toward the final electrification of all service. A gasoline car would be useful in establishing a passenger traffic, but eventually the motive power for operation would be electricity.

Among the officials present at the test from the Delaware & Hudson Company were Messrs. Axel Ekstrom, consulting electrical engineer; J. H. Manning, superintendent of motive power; J. W. Burdick, passenger traffic manager; Jas. McMartin, chief engineer; J. B. Dixey, assistant to second vice-president; W. J. Mullin, assistant to second vice-president; D. F. Wait, superintendent Susquehanna division, and E. F. Peck, manager Schenectady Railway Co.

The officials present of the General Electric Co. were Messrs. E. W. Rice, Jr., technical director; W. B. Potter, chief engineer; J. R. Lovejoy, general manager railway department; J. G. Barry, assistant manager railway department; W. J. Clark, manager transportation department; E. D. Priest, A. F. Bachelder, H. G. Chataine of the railway engine department, and F. H. Gale, advertising department.

The Automatic Gas Producer.

One of the innovations in power production which have come into general use and whose field is constantly widening is the gas-producer equipment, used in connection with gas engines. The economies which these machines have effected for many manufacturers and other users of power are causing them to be in greater demand every year. In this connection it is of timely interest to refer to the Automatic Gas Producer, of which an illustration is presented herewith, built by the Automatic Gas Producer Co. of 25 Broad street, New York. This producer is said to be a combination of economy, salvage and increased effectiveness in almost every material part of its construction and operation.

The automatic gas and steam producer or generator is a simple, cylindrical, upright, water-jacketed steel receptacle, in appearance like a vertical boiler, with a grate at the bottom separating the ash space from the fire space, through which, by properly-arranged pipes and tuyeres, all the air and steam necessary for making gas is blown in proportionate quantity according to the requirements of the fuel in use.

The water-jacketing or double-cylinder construction, with water space thus provided, forms the generator's own boiler, in which ample steam is generated by the heat of the fuel bed and the heat of the generated gases as they pass up and out into and through the washer, scrubber, purifier, etc.

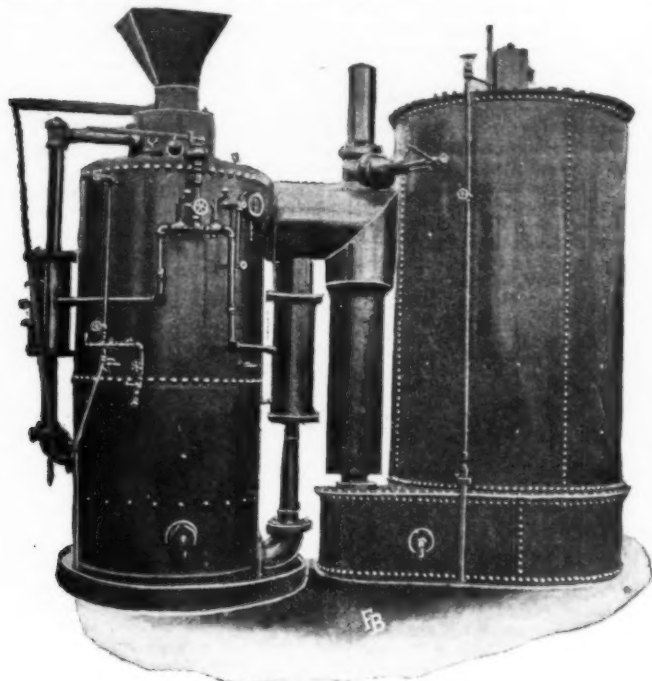
The top of the generator is of cast iron, very heavy, and ribbed for additional strength.

In the center of this top a retort is fitted and suspended therefrom in the center of the generator down to the level at which the firebed should always be kept.

All coals (or other material) are fed into and through this retort by and from a properly-constructed air and gas tight hopper, and spread their coked or charred product evenly and perfectly over the en-

The combined washer, scrubber, purifier and gasholder is also a cylindrical, upright, steel receptacle.

The washer is a cylindrical box, sufficiently elongated on one side to allow the gaspipe from the generator to pass in at the top thereof and down into the water, which it contains in sufficient quantity to form a perfect seal so that no gas can return to the generator, and to remove some of the impurities it has carried in suspension there.



THE AUTOMATIC GAS PRODUCER.

tire firebed from the bottom of the retort as fast as the ashbed lowers or the firebed settles to give space therefor.

All the heavy hydrocarbons that are distilled from bituminous coal or other material in the coking or charring process continuously going on in the retort are drawn off from its top and forced into the generator through the grate and firebed by a small steam-jet blower, and therein and thereby all of the said heavy hydrocarbons are burned in the generator itself into producer gas. The amount of steam and air admitted therewith is regulated to meet the requirements of the kind of fuel in use and the density of hydrocarbons produced therefrom in the retort.

The gas from the generator passes by its own pressure through a pipe into and through a water-seal washer; thence up through the scrubber (which consists of shelves packed with coke); thence up through two other shelves which are arranged as purifiers, which take out any remaining impurities, and thence into the gas engine.

The combined washer, scrubber and purifier is so constructed as to contain and retain at all times sufficient pure gas ready for use in the engine to compensate for any reasonable lapse or delay in generation, thus obviating the now prevalent necessity of large and expensive gas-holders.

The amount of gas generated is regulated by valves which are controlled by a governor on the top of the purifier and the pressure thereupon, so that when the gas engine stops the blower is stopped and virtually no gas is made. This is done automatically by the apparatus itself, without care or attention from the operator. To provide for the disposition of such gases as must necessarily arise from the existing firebed at such times, a safety valve, with pipe set to carry them off into the atmosphere, is placed upon the generator to act promptly upon material pressure and allow the gases to escape.

Above the seal washer, and upon which it sits, is the scrubber, which consists of a series of shelves about 12 inches apart, packed with coke which is kept wet. Openings through these shelves at opposite sides give space to allow the volume of gas generated to pass back and forth through the wet-packed coke between the shelves, which removes whatever impurities may have passed to the washer. The pipe from the generator to the seal washer is covered, and the air used in blowing the generator is heated by passing between this cover and the gaspipes. There are many features of the producer described which can only be fully appreciated by reading the more complete description which the Automatic Gas Producer Co. issues in pamphlet form, containing figures and data regarding the cost of installing these plants, the savings effected in actual operation, the analyses of gases, etc. Correspond with the company for any further details that may be desired.

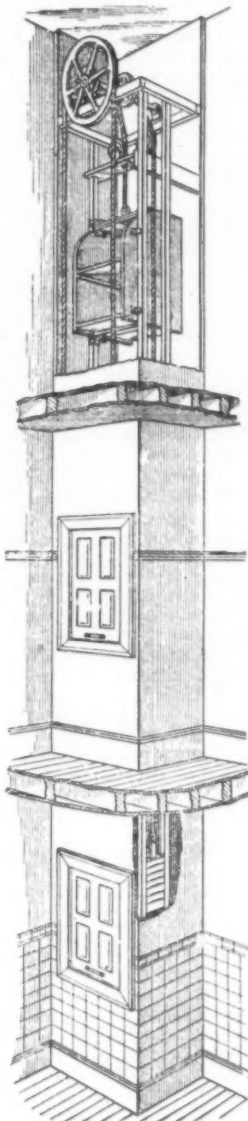
The "Energy" Dumbwaiter.

Architects, builders and house owners who are interested in improved dumbwaiters should note the accompanying illustration of the "Energy" dumbwaiter. This equipment is intended for dining-room service in a residence. It is equipped with patent automatic lock, which securely sustains the car at any point, either empty or loaded, and insures against the car unexpectedly running down and causing a mishap. The shaft is of polished turned steel, and all parts are accurately bored and carefully fitted, resulting in a machine which easily and noiselessly performs its work, so that it is essentially the dumbwaiter for home.

The car is of first quality well-seasoned hard ash, of neat design, with retreating top, the bottom, top and back gained into sides. It is brass-riveted to insure durability; has brass guide shoes, removable shelf and is filled and varnished.

This dumbwaiter does not require a

weight box, thus avoiding the necessity and expense of double-lining the shaft from top to bottom, allowing the weight to be placed inside the well, where it runs smoothly between guides, takes up no



THE "ENERGY" DUMBWAITER.

extra room in the well and is always accessible for adjustment.

The "Energy" dumbwaiter is manufactured by the Energy Elevator Co., 411 Cherry street, Philadelphia, Pa.

Reinforced Concrete Mill Building.

Reinforced concrete, or concrete reinforced by steel in various forms so im-

proved, though long considered as a standard method of construction. Lately, however, through exploitation it has received by the various companies interested in it, seconded by the ready recognition its advantages received from those desiring work to meet exacting conditions (such as railways, municipalities, manufactories, and the United States government itself), it has reached the plane of legitimate practice.

The uses to which such a material can be put are too many to be enumerated, but as an example the accompanying illustration of a reinforced concrete mill building is presented.

This form of construction is particularly suitable to the South, inasmuch as the period of extended cold is less and the time in which it is convenient to build much longer.

The Bell Engineering & Construction Co. of 220 Broadway, New York, acts as consulting engineer and constructor of such buildings, the accompanying illustration showing one it is at work on. It prepares plans, specifications and estimates, guaranteeing them by offering to do the work involved for the amount of the estimate should it prove impossible to secure a bid within that amount. The company undertakes contracts for a certain amount or upon a percentage basis, or at cost, the owner to pay a sum previously agreed upon, representing the company's salary for doing the work, to take the place of what in other cases would be the constructor's profit. This last method is said to be the most satisfactory and economical for all concerned.

The Bell Engineering & Construction Co. intends to make a specialty of Southern work, and has established an office at Norfolk, Va., with Arthur Clarico Freeman, engineer, as manager.

The Tennessee Company.

The recently-called special meeting of the stockholders of the Tennessee Coal, Iron & Railroad Co. was held at Tracy City, Tenn., on January 30, and the proposed increase of capital was affirmatively voted. This increase will be obtained by an issuance of new shares amounting to \$6,751,700, which will bring the total capitalization of the company up to \$30,000,000. It is generally understood that this new capital is to be expended for the purpose of improving and developing the company's various properties—iron furnaces, steel plant, coal and iron mines, etc. When details have been decided regarding these future betterments proper announcements will be made public. The company's gen-



REINFORCED-CONCRETE FACTORY BUILDING BEING ERECTED BY BELL ENGINEERING & CONSTRUCTION CO.

eral offices are at Birmingham, Ala., and its New York office at 100 Broadway. Don H. Bacon is president.

Construction Department

TO OUR READERS!

In order to understand and follow up properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY.

The MANUFACTURERS' RECORD seeks to verify every item reported in its Construction Department by a full investigation and complete correspondence with everyone interested. But it is often impossible to do this before the item must be printed, or else lose its value as news. In such cases the statements are always made as "rumored" or "reported," and not as positive items of news. If our readers will note these points they will see the necessity of the discrimination, and they will avoid accepting as a certainty matters that we explicitly state are "reports" or "rumors" only. We are always glad to have our attention called to any errors that may occur.

*Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery, Proposals and Supplies Wanted."

In correspondence relating to matters reported in this paper, it will be of advantage to all concerned if it is stated that the information was gained from the MANUFACTURERS' RECORD.

ADDRESS FULLY.

To insure prompt delivery of communications about items reported in these columns, the name of one or more incorporators of a newly incorporated enterprise should be shown on the letter addressed to that town or to the town of the individual sought, as may be shown in the item, as sometimes communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. This will help to insure prompt delivery of your communication, although it is inevitable that some failures on the part of the postal authorities to deliver mail to new concerns will occur.

WRITE DIRECTLY.

It is suggested to advertisers and readers that in communicating with individuals and firms reported in these columns, a letter written specifically about the matter reported is likely to receive quicker and surer attention than a mere circular.

BALTIMORE BUILDING NOTES.

Business Buildings.

Baltimore—Apartment-house.—George C. Morrison, 1631 Park avenue, has awarded contract to W. T. Child, 14 West 20th street, for general alterations to building at 102 West North avenue, converting it into an apartment-house.

Baltimore—Dwellings.—The Park Land & Improvement Co., John Waters, president, 23 East Centre street, has purchased about 10 acres of ground bordering on Whiteclock and Robert streets and Druid Hill Park and will erect a number of three-story brick and stone dwellings on the site.

Baltimore—Warehouses.—It is reported that B. Smith has awarded contract to Harry Siegel, builder, 217 South Eden street, for the construction of two warehouses at 107 and 109 East Lombard street; three stories, 40x76 feet; brick with marble trimmings; Wm. A. Foreman, architect, 2206 York road.

Baltimore—Office Building.—The Realty Corporation, Frank M. Widner, president, 8 East Lexington street, it is reported, will erect office building at southwest corner Lexington and St. Paul streets.

Baltimore—Store Building.—George K. McGaw, 344 North Charles street, has commissioned Alfred H. Taylor, architect, Hanover Building, 110 West Fayette street, to prepare plans and specifications for store building to be erected at southwest corner Charles and Mulberry streets; four stories, 50x100 feet; fireproof construction.

Baltimore—Suburban Development.—The City & Suburban Realty Co., Dr. George C. Wegelarth, president, 306 Calvert Building, Fayette and St. Paul streets, has purchased 215 acres of land on Hamilton avenue and will develop it for residential purposes. A saw-mill will be erected on the site for converting the timber on the tract into building material.

Baltimore—Dwellings.—The Dukeland Park Co., 705 Calvert Building, has awarded contract to Wm. N. Hildebrand, Lobe Building, 15 South Gay street, for the construction of

18 two-story brick dwellings at Dukeland, a suburb of Baltimore; cost about \$30,000; Jacob F. Gerwig, architect, Hoffman Building, 11 East Lexington street.

Baltimore—Office Building.—The Thomas Wilson Sanitarium, John A. Tompkins, treasurer, 301 North Charles street, has awarded contract to John Cowan, builder, 106 West Madison street, for general alterations to four-story office building at northeast corner Charles and Saratoga streets. Plans provide for fireproof elevator shaft, new stairways, metal ceilings, steel work, slag roof, electric elevator; Haskell & Barnes, architects, Central Savings Bank Building, 3 East Lexington street.

Baltimore—Dwellings.—Walter L. Westphal, builder, 1214 Federal street, will erect 13 two-story brick dwellings on Curley near Fayette street to cost about \$9000.

Baltimore—Store Building.—Isaac M. Cate, Waverly, Baltimore, has awarded contract to Edward Brady & Son, builders, 1109 Cathedral street, for the construction of store building at 317 North Charles street.

Baltimore—Warehouse.—Joseph W. Hargrave, 443 North street, has awarded contract to F. A. Wilson, 1509 York road, for the construction of warehouse at 648 West Baltimore street; three stories, 13x150 feet; brick with galvanized-iron trimmings; tin roof; sanitary plumbing; heating system.

Baltimore—Dwellings.—John Hubner, Maryland Telephone Building, Lexington and Courtland streets, will erect 11 two-story brick dwellings on Frederick avenue near Garrison avenue to cost about \$15,000.

Baltimore—Dwelling.—C. W. Eagan, claim agent Baltimore & Ohio Railroad Co., has awarded contract to B. W. & E. Minor, 20 Clay street, for the construction of 2½-story frame dwelling on Chestnut near 12th street to cost about \$9000; W. L. Minor, architect, 20 Clay street.

Baltimore—Dwelling.—Douglas C. Turnbull, 2011 North Calvert street, has awarded contract to the Roland Park Company, Roland Park, for the construction of frame dwelling at Roland Park; Bayard Turnbull, architect, 12 East Lexington street.

Baltimore—Suburban Development.—The Mt. Washington Development Co. has been incorporated with an authorized capital stock of \$100,000 to develop a tract of 160 acres of land for residential purposes at Mt. Washington (suburb of Baltimore) by George R. Webb, Maryland Telephone Building; John Waters, 23 East Centre street; Harry W. Webb, Maryland Telephone Building; David E. Evans, Maryland Telephone Building, and J. William Middendorf, North and Fayette streets.

Baltimore—Church.—Tormey & Leach, architects, 323 North Charles street, have been commissioned to prepare plans and specifications for church building to be erected at Highland avenue and Pratt street by the Highland Avenue Methodist Episcopal Church, John H. Jeffries, pastor. The building committee are John W. Cleaver, 216 Gough street extended; John Zeigenthal, Charles Weems and William Iglehart.

Baltimore—Church.—The Mount Sinai Baptist Church has been incorporated by Rev. John H. Taylor, Sidney Taylor, 2237 East Baltimore street; Frank Carter, LeRoy Penn and Thomas I. Taylor. A lot has been purchased at Neighbor and Hillman streets and a church building will be erected on the site.

Baltimore—Dwellings.—Edward J. Gallagher, builder, 2638 East Baltimore street, will erect seven two-story brick dwellings on Rose near Baltimore street to cost about \$9000.

Baltimore—Hotel.—Referring to building at northeast corner St. Paul street and Bank lane to be remodeled by John J. Hurst, Calvert Building, the following contractors are estimating on the work: John A. Sheridan Company, 321 North Holliday street; Charles Gilpin, Union Trust Building, Charles and Lexington streets; Thomas B. Standfield & Son, 109 Clay street; Noel Construction Co., Eutaw and McCulloh streets, and Frederick Wright & Co., National Marine Bank Building, Gay and Water streets. Building is seven stories with basement, 25x100 feet; fireproof construction; electric wiring and fixtures; sanitary plumbing; heating system; elevator; bids to be in February 15.

Baltimore—Hotel.—John J. O'Donoghue, 801 East Baltimore street, has purchased lot at southeast corner Baltimore and Front streets and will erect five-story hotel on the site, which is about 57x127 feet.

Manufacturing Buildings and Other Enterprises.

Baltimore—Dice, Checkers, etc., Factory.—The Baltimore Dice Co. has been incorporated to manufacture dice, checkers, etc., from bone, ivory and celluloid by Joseph D. Hess, Joseph Schoenig, M. Ira Hess, Lowell P. Breining, 1117 North Broadway, and Thos. L. Morris.

Baltimore—Greenhouse.—Charles Siegwart, Old Frederick road near Fairview avenue, will erect greenhouse 20x100 feet.

Baltimore—Steam Laundry.—Referring to general alterations to be made to building at northwest corner Howard and Mulberry streets by the Sterling Laundry Co., 321 North Holliday street, the following contractors are estimating on the work: Walter E. Burnham, Union Trust Building, Charles and Fayette streets; Milton C. Davis, 140 West Fayette street; H. C. Shelley, 224 Druid Hill avenue; John A. Sheridan Company, 321 North Holliday street; Joseph Schamberger, 2122 East Baltimore street, and Moylan & Welsh. Plans provide for new front and fireproofing; Louis Levi, architect, American Building, Baltimore and South streets.

Baltimore—Brewery.—The Darley Park Brewing Co., J. H. Straus, manager, 222 North street, has awarded contract to F. H. Foreman Building Construction Co., 1522 Orleans street, for general alterations to one of its buildings at its plant on Harford avenue near North avenue. A two-story addition, 14x23 feet, will also be constructed.

Baltimore—Piers and Docks.—The municipal Board of Awards has awarded contract to the Degnor Contracting Co., New York, for the construction of Piers 1, 2 and 3 at its approximate bid of \$231,000. Plans and specifications were prepared by Major N. H. Hutton, harbor engineer, City Hall, who will have supervision over the work.

Baltimore—Electric-light and Power Plant.—The Baltimore Electric Light & Power Co. has applied to the State legislature for incorporation with a capital stock of \$250,000, to be increased, if necessary, to \$2,500,000, to establish and operate electric-power plant, by Thomas J. Shryock, Philpot and Thames streets; Summerfield B. Medairy, Alfred E. Booth, 2532 Eutaw Place; Robert M. Spedden, Baltimore and North streets, and Peter E. Tome, American Building, Baltimore and South streets.

Baltimore—Printing and Stationery.—The Kelly Stationery Co., 1 South Hanover street, has been incorporated with an authorized capital stock of \$10,000 to conduct a printing and stationery business by James T. Kelly, John W. Brown, Wm. Benson, Wm. H. Kelly and Morris A. Soper.

Baltimore—Candy Factory.—The Darby Candy Co., manufacturers of candy, 700 to 710 Hillen street, has commissioned Charles M. Anderson, architect, 324 North Charles street, to prepare plans and specifications for addition to its factory building; five stories, 47x130 feet; mill construction. This addition will provide for double the present capacity.

Subbids Wanted.

Mention of contractors wanting subbids on construction work and material will be found, when published, in the "Machinery Wanted" column on another page under the heading of "Building Equipment and Supplies."

ALABAMA.

Albertville—Water-works and Electric-light Plant.—It is reported that Edgar B. Kay, State University, University, Ala., has applied for franchise to construct water-works and electric-light plant; approximate cost \$40,000.

Birmingham—Iron Furnaces and Mines, etc.—The directors of the Tennessee Coal, Iron & Railway Co. at its meeting held on January 31, 1905, voted to increase the capital stock to \$30,000,000. Mention was made in January in these columns that the directors had recommended an increase in capital by an issuance of common stock, a special meeting being called for January 31 at Tracy City, Tenn. The increase, it is stated, is made for the purpose of improving the various properties owned; general offices, Birmingham; New York office, 100 Broadway.

Birmingham—Sewerage, Water-works and Electric-light Plant.—The issuance of \$50,000 of bonds for constructing sanitary sewer system and \$50,000 for improving water-works and electric-light plants in North Birmingham is being considered; T. H. Friel, mayor.

Birmingham—Light and Power Plant Im-

provements.—Ford, Bacon & Davis are engineers in charge of improvements reported last week as being made to the plant of the Birmingham Railway, Light & Power Co.

Cullman—Canning Factory.—Cullman Fruit & Produce Association, L. A. Fealy, president and manager, and Charles C. Graf, secretary, will erect a two-story building 80x140 feet and equip for canning tomatoes, fruits and sweet potatoes, having a daily capacity of 60,000 cans. About \$9000 will be invested. Mr. Fealy was mentioned last week as interested in the establishment of a canning factory.*

Decatur—Filtration Plant.—Reports state that the Decatur Water-Works Co. will install filtration plant. Plans and specifications have been prepared.

Ensley—Nail Mill.—It is reported that the Southern Steel Co., E. T. Schuler, president, will rebuild nail mill reported burned last week at a loss of \$90,000; main office, Gadsden, Ala.

Ensley—Publishing.—Chartered: Sun Publishing Co., with \$5000 capital stock. J. H. Garrison is president and general manager; J. H. Leath, secretary, and O. R. Berney, treasurer.

Florence—Gas-plant Improvements.—Reports state that the North Alabama Gas Co. is erecting brick additions and installing additional equipment for doubling the capacity. It is also stated that another gas main is being constructed across the Tennessee river to supply gas to Sheffield and Tusculum, Ala.

Gadsden—Publishing.—Daily Times-News Co. has been incorporated with \$25,000 capital stock for the publication of a daily and semi-weekly newspaper, mentioned last month. It has purchased and will operate the plant of the Times-News. C. E. Meeks is president, general manager and treasurer; O. R. Hood, vice-president, and Rev. J. R. McMullen, treasurer.

Leeds—Portland-cement Works.—The Standard Portland Cement Co. has been organized with J. R. Hanahan of Charleston, S. C., president and treasurer, and Frederick H. Lewis of Staunton, Va., general manager. It will build a Portland-cement plant designed to represent a unit of six 100-foot kilns producing 1800 barrels of Portland cement and representing an investment of more than \$500,000. Mr. Lewis is the construction engineer in charge, and he has awarded contracts for most of the machinery and buildings. He has prepared the plans and specifications for the plant. Construction work will begin immediately, and a branch track is now being extended from the Southern Railway to the site of the plant in order to provide transportation facilities. A large part of the capital for the enterprise will be furnished by Charleston (S. C.) and Atlanta (Ga.) investors.

Marion—Laundry.—T. H. Barker, it is reported, will establish laundry. It is stated that a building has been secured and machinery purchased.

Mobile—Candy Factory.—Monarch Candy Co. has increased capital stock from \$15,000 to \$40,000.

Montgomery—Drug Factory.—St. Bernard Drug Co. has been incorporated with \$3000 capital stock to manufacture and deal in drugs, etc. It is also proposed to manufacture wooden crates for shipping. P. S. Hay is president; J. W. Kelly, vice-president, and R. J. Myers, secretary-treasurer.

Opelika—Gas Plant.—Reports state that H. L. McKee of Meridian, Miss., has applied for franchise for the establishment of gas plant.

Selma—Iron Works.—Union Iron Works Co., reported incorporated last week, is an established company which was purchased in December by J. B. Ellis and associates. Engines and boilers, live rolls and logging cars are manufactured. Capital stock was increased January 15 from \$40,000 to \$60,000.

Sheffield—Bottling Works.—The Pratt Company, it is reported, will establish bottling works.

Tuskaloosa—Water-works.—The city is reported as considering the installation of system of water-works. Address The Mayor.

Uniontown—Street Improvements.—I. W. Roundal is engineer in charge of improvements previously reported to be made to streets at a cost of \$20,000; W. J. Valden, mayor.*

ARKANSAS.

Cotter—Electric-light Plant.—City will let franchise for the construction of electric-light plant; population 1000. Address E. B. Ortmann.

Forrest City—Land Improvement.—Chartered: R. G. Hobbs Land Co., with \$5000 capital stock, by R. G. Hobbs, T. C. Kimber and J. A. Kimber.

Fort Smith—Land Improvement.—Southside Development Co. has been organized with Tom Taylor, president; George H. Coleman, vice-president; Harry Coleman, secretary, and Chl. Whitson, treasurer, for the development of a tract of land adjoining city.

Mena—Railroad and Bridge Construction.—Consolidated Construction Co. has been incorporated with \$25,000 capital stock by A. Q. Nash, J. B. McMahon and M. C. Morris to do railroad and bridge-construction work.

Ozark—Electric-light Plant.—W. C. Bill and Whit Martin have applied for franchise to construct and operate electric-light plant.

Perla—Screen-door Factory.—Owosso Manufacturing Co. has not fully decided whether to rebuild plant reported burned on site of burned structure or at some other location. If at present site, it is proposed to erect a two-story frame building 80x200 feet, two-story frame 70x100 feet, and one-story brick 40x80 feet. Screen doors, window screens and knockdown frames are manufactured; yearly output 200 cars. From \$30,000 to \$40,000 will be invested.

Pine Bluff—Spoke Factory.—Dixie Spoke Co., N. A. Anderson, manager, has secured site on which to establish plant.

Success—Box and Crate Factory.—No-Tack Box & Crate Co. has been incorporated with \$10,000 capital stock to manufacture fruit boxes, crates, etc. J. D. Proctor is president.

FLORIDA.

Gainesville—Sewerage System.—Board of Public Works will receive bids until March 7 for the construction of sewerage system, bids opened January 25 having been rejected, being in excess of appropriation, as mentioned last week.*

Pensacola—Naval Stores.—J. R. Saunders, H. C. Barnes and associates are organizing company with \$500,000 capital stock to manufacture and deal in naval stores.

Pensacola—Cold-storage Plant.—Armour & Co., main office 205 La Salle street, Chicago, Ill., are arranging for the establishment of cold-storage plant mentioned last week.

Punta Gorda—Public Improvements.—City is considering issuing \$18,000 of bonds for constructing wharf, water-works and electric-light plant; M. V. Williams, mayor.

St. Augustine—Street-paving.—City has completed arrangements for paving Charlotte street with vitrified brick, and contract will be let February 15; J. M. G. Carrera, city clerk.*

GEORGIA.

Athens—Brick Works.—The Georgia Brick Co., reported incorporated last week, continues an established plant, and will expend about \$10,000 in improvements; daily capacity 25,000 bricks. Machinery has been purchased. C. T. Hussey is secretary and manager.

Atlanta—Viaduct.—Southern States Reinforced Concrete Co. is bidding on the construction of the Washington-street viaduct, for which bids will be opened February 19.*

Atlanta—Fertilizer Factory.—It is reported that the Georgia Division of the Farmers' Union is considering the erection of a fertilizer factory. Address C. S. Barrett of Upton, Ga., State president.

Atlanta—Publishing.—Chartered: Textile Publishing Co., with \$50,000 capital stock, by W. R. C. Smith and associates.

Atlanta—Hardware.—J. B. Hightower and T. J. Hightower, Jr., have applied for a charter for the J. B. Hightower Hardware Co. with \$50,000 capital stock to manufacture and sell hardware.

Atlanta—Publishing.—Chartered: Georgian Company, with \$100,000 capital stock and privilege of increasing to \$500,000, by F. L. Seely of Atlanta, E. W. Grove of St. Louis, Mo., and Charles M. Palmer of New York, N. Y., for the publication of a newspaper.

Atlanta—Bakery.—Chartered: Schlesinger-Meyer Bakery Co., with \$10,000 capital stock and privilege of increasing to \$250,000, by H. L. Schlesinger, Morris P. Schlesinger and Samuel Meyer, Jr., to operate bakery.

Cave Springs—Cotton Gin.—Tumlin Gin Co. has been incorporated with \$10,000 capital stock by Albert N. Tumlin and associates to erect cotton gin. About \$4000 will be invested; size of building not determined.*

Cochran—Water-works and Electric-light Plant.—Owing to delay in obtaining specifications the date for opening bids for the construction of water-works and electric-light plant has been postponed from February 6 to February 20; Arthur Pew, Atlanta, Ga., engineer in charge. W. B. Denham is city clerk.*

Columbus—Silica Mines.—Columbus Concrete Supply Co., Ernest L. Hill, president, is arranging for the development of silica-sand deposits.*

Columbus—Street-paving.—Southern Bitulithic Co., Nashville, Tenn., has been awarded contract for 30,000 yards of bitulithic paving, previously mentioned.

Columbus—Furniture Factory.—John F. Weathers and associates, it is reported, will establish furniture factory.

Columbus—Land Improvement.—Columbus Realty & Improvement Co. has been incorporated with \$50,000 capital stock by Solomon Loeb, Morris Loeb and others.

Dahlonega—Mining and Development Company.—Georgia Mining & Development Co. has been incorporated with \$1,500,000 capital stock by S. W. Van Syckel, Wm. B. Word, T. Halsted Smith, W. E. Scott and associates to develop mineral lands, construct dams, develop and utilize water-power, etc.

Dawson—Cottonseed-oil Mill.—Reports state that the Farmers' Oil & Fertilizer Co. is considering establishing cottonseed-oil refinery. If the installation of plant is decided on, the present capital stock of \$35,000 will be doubled.

Macon—Lumber Company.—T. C. Parker, J. P. Wheless, T. C. Parker, Jr., and Thomas B. West have incorporated the Georgia & Florida Lumber Co. with \$10,000 capital stock.

Marietta—Gas Plant.—Consolidated Railway & Light Co., A. R. Law, vice-president, Suite 216, the Bourse, Philadelphia, Pa., has made application for franchise to construct and operate gas plant.

Nelson—Marble Mill.—Reports state that Blue Ridge Marble Co. has begun the construction of an additional mill.

Savannah—Bag Factory.—American Bag Manufacturing Co. has been incorporated with \$10,000 capital stock with privilege of increasing to \$250,000 by Amason Mohr, George E. Cope and William S. Daffin to operate bag factory.

Waycross—Saw-mill.—Reports state that S. V. Jefford is erecting saw-mill with a daily capacity of 10,000 feet.

KENTUCKY.

Davidson—Saw and Planing Mill.—T. S. Clark & Co. will rebuild saw and planing mill reported burned recently.*

Dawson—Timber-land Development.—Reports state that F. L. Clore & Son of Henderson, Ky., of the Hillman Land & Iron Co., St. Louis, Mo., has purchased 500 acres of timber land near Dawson and will arrange at once for the erection of saw-mill.

Fulton—Telephone System.—A company has been organized with J. D. Kennady, president; Gussie Browder, secretary, and John Binkley, treasurer, to operate telephone system.

Glasgow—Planing Mill.—Glasgow Planing Mill Co. has increased capital stock from \$5000 to \$30,000. It is stated that the company will erect new building and equip for increasing output.

Gray—Coal-mining.—Lynn Camp Coal Co., recently mentioned, has about completed arrangements for mining coal on an 800-acre tract of land which has been leased in Knox county. Machinery has all been purchased. L. H. Hedrick is president; W. B. Craven, vice-president, and S. F. Rock, secretary-treasurer and general manager.

Hopkinsville—Lumber Plant, Wagon Factory, etc.—The Forbes Manufacturing Co., which recently increased its capital stock from \$300,000 to \$500,000, will shortly begin work on the erection of proposed band-saw mill, hub and spoke factory. It is also proposed to erect factory for the manufacture of wagons, which will be equipped for increasing the capacity from 3000 to 10,000 wagons annually.

Lookout—Coal Mines and Coke Ovens.—Henry Clay Coal & Coke Co. has incorporated with \$50,000 capital stock to mine coal and manufacture coke; incorporators, William J. Beury of Algoma, W. Va.; J. W. Cockill of Pennington Gap, Va.; George S. Couch, Jr., of Charleston, W. Va.; Dr. C. W. Adams and E. G. Faust of Pottsville, Pa.

Lexington—Sewerage System.—City will let contract February 15 for the construction of an eight-inch sanitary sewer with connections, etc.; Thomas A. Combs, mayor.*

Louisville—Brass Foundry, etc.—Standard Sanitary Manufacturing Co. has purchased site on which to erect brass foundry, office buildings, etc. The office building will be four stories of brick, 125x80 feet, and cost \$30,000, and the brass foundry will be equipped for increasing the present output about 5 per cent. It is estimated that about \$50,000 will be expended.

Louisville—Drug Company.—Chartered: McGee Drug Co., with \$3000 capital stock, by

M. A. McGee, G. R. McGinnis and S. A. Simpson.

Louisville—Publishing.—Chartered: Gordon Publishing Co., with \$5000 capital stock, by James M. Heady, Jr., Boyce Watkins and L. F. Withers.

Louisville—Vinegar Factory.—Jones Bros. & Co. (vinegar manufacturers) have increased capital stock from \$125,000 to \$500,000. They have purchased an entire block, consisting of eight buildings, which will be remodeled and equipped with machinery for tripling the present capacity.

Louisville—Pottery.—Louisville Pottery Works is being organized with \$100,000 capital stock by Albert B. Head of Paducah, Ky.; Samuel Windote of Cincinnati, Ohio, and associates for the manufacture of jugs, flower pots, etc. Site has been secured on which to locate plant.

Middlesboro—Coal Mines.—Edgewood Coal Co., previously reported as being organized for the development of about 600 acres of coal land near Middlesboro, has begun mining operations. Organization of company has been completed with W. C. Sleet, president; J. L. Manning, vice-president and general manager, and Frank Hoss, secretary.

Owensboro—Power-house.—Reports state that Farnsworth & Hall of Henderson, Ky., have contract to erect power-house for the Owensboro City Railway Co.

Paducah—Distillery.—Biederman Distilling Co. has been incorporated with \$5000 capital stock by Jake Biederman, B. J. Presler, J. B. Buchanan and Henry Biederman to operate distillery.

Paducah—Cereal Mill.—The Old Kentucky Cereal Co. has been organized by J. J. Shephard of Pittsburg, Pa., and associates to establish cereal mill with a daily capacity of 200 bushels of corn, wheat and rice. A building has been secured. Mr. Shephard was reported in December as to organize company with \$100,000 capital stock to establish cereal mill.

Paducah—Soap Factory.—L. Hayden of Hopkinsville, Ky., is investigating site on which to locate plant for the manufacture of soap. It is proposed to organize the Lusterine Soap & Polish Co. with \$3000 capital stock to operate the plant.

Paducah—Soap and Polish Plant.—The Luster Soap Co., which is owned by the Lusterine Mining & Polish Co., has completed its plant for manufacturing soap and polish from "Lusterine," a volcanic deposit which is being mined between Paducah and Hopkinsville, Ky. The mining plant is in operation and the mineral is ground and sacked for shipment to Paducah, where it is manufactured into soap, polish, washing powders, etc. The Luster Soap Co. has a paid-in capital of \$26,000, and J. D. Bacon is business manager. L. Hayden of Hopkinsville, Ky., is secretary and general manager. All machinery has been purchased, but cartons, oils, perfumes, advertising novelties, etc., will be bought.*

Paintsville—Electric-light Plant.—Reports state that E. E. Maggard of Morehead, Ky., has applied for franchise to construct and operate electric-light plant.

LOUISIANA.

Alexandria—Lumber Company.—Chartered: White Sulphur Lumber Co., Ltd., with \$50,000 capital stock. Thomas H. Garrett is president; Waverly Whitaker, vice-president, and William L. Whitaker, Jr., secretary-treasurer.

Calcasieu Parish—Iron-ore Mines, etc.—John W. Harrison, Room 204, Columbia Building, St. Louis, Mo., and associates have purchased 3500 acres of iron-ore lands in Calcasieu parish, and arrangements will be made at once for its development. The land is also heavily timbered and contains vast sulphur deposits, both of which will be developed later.

New Orleans—Machinery Company.—The Manufacturers' Machinery Co. has been incorporated with an authorized capital stock of \$100,000 to act as agents for Northern machine manufacturers. A building has been secured at 734-736 Baronne street. Sydney Marshall is president; Harry K. Ivens, vice-president, and Walter M. G. Gates, secretary-treasurer. The company will also establish a machine shop for repair work and the manufacture of several patents.

New Orleans—Brewery.—Union Brewing Co., reported organized last month with \$250,000 capital stock for the establishment of brewery, has completed organization with J. H. Lautenschlaeger, president; William Brandt, vice-president; Ernest Jacobs, secretary and treasurer.

Singer—Saw-mill.—J. S. Brice of Singer, W. C. Strange of Hawthorn, La., and Ben Collins of Kansas City, Mo., have purchased 7500 acres of timber land near Singer, which

will be developed. Arrangements will be made for the erection of a saw-mill.

MARYLAND.

Hillsboro—Water-power-Electrical Plant.—It is reported that E. W. Maloney, representing a Philadelphia (Pa.) company, is investigating the water-power of the Tuckahoe river for development purposes. It is stated that a dam will be constructed and 200 horsepower developed, which will be transmitted by electricity to Hillsboro, Denton, Greensboro, Ridgely, Centreville and adjacent towns.

Hagerstown—Water-works.—The purchase of local water-works or the construction of new plant is being considered, and a resolution will be introduced into the legislature for authority to issue \$500,000 of bonds for this purpose. Address The Mayor.

Hyattsville—Electric-light Plant.—It is stated that a bill has been introduced in the legislature for authority to issue \$12,000 of bonds to construct electric-light plant. Address The Mayor.

Hyattsville—Gas Plant.—Hyattsville Gas Co. is being incorporated by Wallace A. Bartlett, C. A. M. Wells, R. N. Tyon, W. A. Gustaf, Percy H. Velich of Hyattsville and T. J. Hayward of Baltimore, Md., to erect gas plant.

Lonaconing—Ice and Cold-storage Plant.—Lonaconing Storage & Ice Co. has been organized with Daniel J. Moran of Lonaconing, president; A. R. Bender of Cumberland, Md., vice-president; George W. Stump of Lonaconing, resident manager; Edward P. McKenna of Cumberland, Md., secretary, for the erection of ice and cold-storage plant. A building 126x56 feet will be erected and machinery installed for a daily capacity of 25 tons of ice. Equipment has been purchased. A company was previously reported to be organized with \$25,000 capital stock for this purpose.

Snow Hill—Barrel and Crate Coverings.—Reports state a company will be organized with \$25,000 capital stock to manufacture veneer barrel, crate and basket coverings invented by Everett D. Moore.

Sykesville—Grain Elevator and Warehouse.—Wade H. D. Warfield has purchased site on which to erect grain elevator, storage warehouse, etc.

MISSISSIPPI.

Columbus—Toothpick Factory.—New South Flow Co., manufacturer of steel, cast and chilled plows, contemplates installing machinery for the manufacture of toothpicks and other small articles of this character made from white oak and other hardwoods. Correspondence from jobbers is desired.

Corinth—Electric Plant.—Chartered: Alcorn Electric Co., with \$5,000 capital stock, by J. H. Jones, J. M. Boone and others.

Gulfport—Grain Elevator.—Chartered: Gulfport Grain & Elevator Co., with an authorized capital stock of \$50,000, by J. F. Stuard, H. W. Foote, D. L. Mohler and J. A. Richardson.

Hattiesburg—Lumber Mill.—McElreath Lumber Co. has incorporated with \$50,000 capital stock to manufacture lumber, etc.; incorporators, T. A. McElreath, J. D. Parsons and Z. A. Bolton.

Jackson—Roofing and Cornice Company.—Mississippi Roofing & Cornice Co. has been incorporated with \$10,000 capital stock by T. C. Fitzgerald, H. M. Quin and others.

Jackson—Greenhouses.—Jackson Floral Co. is being organized with \$5000 capital stock to cultivate flowers. Arrangements will be made at once for the erection of two greenhouses each 30x100 feet. W. J. Brown is manager; P. O. Box 82.

Jackson—Desk and Chair Factory, etc.—Mississippi Seating Co. is being organized with \$50,000 capital stock by W. Q. Cole, J. C. Longstreet, Wirt Adams and associates to manufacture desks, opera chairs and seatings of various kinds. It is proposed to absorb the plant of the Southern Wood & Metal Furniture Co.; offices, 203-204 Winter Building.

Laurel—Cotton Mill.—Laurel Cotton Mills has awarded contract to Jefferson Construction Co. of Birmingham, Ala., at \$22,764 for erection of additional mill building, two stories high, 75x164 feet. This building will be equipped with 10,400 spindles, thus doubling present spindleage and permitting the 640 looms to be supplied with yarns without the necessity of night operations. Stuart W. Cramer of Charlotte, N. C., is mill engineer in charge and will furnish the machinery. Total expenditure will be about \$125,000. (This enlargement noted in December.)

Meridian—Electric-light and Power-plant Improvements.—Meridian Light & Power Co. will expend about \$110,000 in improvements to plant, installing new machinery, including an

300 horse-power cross-compound condensing Corliss engine and a 750-horse-power generator. Machinery has been purchased. Address General Manager Gibson.

Silver Creek—Ice Plant.—Silver Creek Ice Co. has been incorporated with \$20,000 capital stock by B. S. Nelson, L. E. Nelson and A. T. Longino.

MISSOURI.

Carthage—Zinc and Lead Mines.—Trinity Zinc, Lead & Smelting Co., previously reported as to develop zinc and lead properties near Carthage, will erect a 500-ton concentrating plant. Neither engineer nor architect has been selected. Company can be addressed care of the International Power Co., 74 Broadway, New York.

Bloomfield—Hardware and Furniture Company.—Williams Hardware & Furniture Co. has been incorporated with \$10,000 capital stock by E. J. Williams, Harry Ezzell and H. D. Wilcox.

Boonville—Chemical Works.—Roy H. Ellis, I. W. Kurtz, E. E. Ellis and others have incorporated the Champonal Chemical Co. with \$25,000 capital stock.

Clinton—Water-works and Electric-light Plant.—It is reported that an election will be held February 16 to vote on the issuance of \$70,000 of bonds for the construction of water-works and \$30,000 for electric lights. Address The Mayor.

Dexter—Ice, Fuel and Power Company.—Dexter Ice, Fuel & Power Co. has been incorporated with \$12,000 capital stock by J. E. Armstrong, J. N. Miller, E. E. Disher and others.

Fayette—Water-works.—Hall Bros., Clinton, Mo., have contract at \$13,300 for general construction work on proposed water-works. Contracts for reservoir, tower and tank have also been awarded.

Galena—Water-power-Electrical Plant.—It is reported that W. H. Standish of North Dakota is arranging for the establishment of power plant on the James river, 12 miles distant, to generate enough electricity to supply power and light for all the mines, factories and towns in Southwest Missouri.

Humphreys—Flour Mill.—J. M. Stringer, Sklatook, I. T., mentioned last week as to build a 60-barrel flour mill, will erect a three-story building, 30x40 feet. Contracts have been let.

Joplin—Zinc Mines.—Paoma Mining Co., reported incorporated last week with \$140,000 capital stock, has purchased 20 acres of land near Joplin containing zinc deposits, and will arrange at once for its development.

Kansas City—Bolt and Nut Works.—Kansas City Bolt & Nut Co. is reported as to expend \$100,000 in improvements to plant, doubling the present iron output. It is stated that two additional buildings will be constructed on iron framework, one to be 100x75 feet and one 125x40 feet, to accommodate the additional machinery, which will include a machine weighing 100,000 pounds for converting scrap iron into finished bar iron, a 500-horse-power steam engine to operate same, two large heating furnaces, etc.

Kansas City—Manufacturing.—Chartered: Central Dental Manufacturing Co., with \$30,000 capital stock, by B. L. Shobe, F. W. Franklin and A. H. Norris.

Kansas City—Gas Plant.—An ordinance is said to be before the city council providing for a special election to be held March 6 to vote on the issuance of \$2,250,000 of bonds for a municipal gas plant. Address The Mayor.

Kansas City—Brass and Iron Works.—Platt Manufacturing Co. has been incorporated with \$10,000 capital stock to operate brass and iron works. M. R. Platt, Jr., is president and treasurer, and T. M. Tillson, vice-president; office, 21st and Campbell streets.

Quitman—Oil and Mineral Lands.—James Price, L. M. Price and J. W. Biggs have incorporated the Northwestern Oil & Mineral Co. with \$10,000 capital stock.

Richmond—Coal Mines.—Maple Hill Coal Co. has been incorporated with \$15,000 capital stock by G. A. Hughes, John Gibson, John S. Hughes and others.

St. Louis—Farm Implements.—C. W. Mansur, Alpha T. Stevens, Frank A. Sprague and associates have incorporated the John Deere Plow Co. with \$250,000 capital stock to manufacture and deal in farm implements, etc.

St. Louis—Pickle and Canning Factory.—National Pickle & Canning Co. has incorporated with \$500,000 capital stock to operate pickle and canning factory; incorporators, C. Marquard Foster, Jewett Wagoner, Adolf Braun, John W. Dodson and associates.

St. Louis—Lumber Mill.—Chartered: John F. Scobee Lumber Co., with \$12,500 capital stock, by John F. Scobee, Amanda L. Scobee and Wm. H. Miller, to manufacture lumber.

St. Louis—Flavoring Extracts.—Frederick T. Kuehne, Edwin A. Kuehne and O. E. Bu-

der have incorporated the F. T. Kuehne Flavoring Extract Co. with \$10,000 capital stock to manufacture and deal in flavoring extracts.

St. Louis—Metal-concrete Chimneys.—Incorporated: Metal Concrete Chimney Co., with \$20,000 capital stock, by John D. Boland, J. D. Rippey and W. H. Seward, to construct and erect buildings, towers, etc.

St. Louis—Prospecting Company.—Incorporated: H. R. Ameling Prospecting Co., with \$30,000 capital stock, by William Wehrenbrecht, Adolph Lachman of St. Louis and Herman R. Ameling of Fredericktown, Mo., to engage in a general developing, prospecting and drilling business.

St. Louis—Electrical Construction.—Electric Construction Co. has been incorporated with \$125,000 capital stock by Arthur W. Lambert, Sam B. Jeffries, Edward A. Faust and associates to construct telephone and electric-light and power plants, manufacture and deal in electric instruments and equipments, etc.

Valley Park—Iron Foundry.—It is reported that Eastern parties will establish iron foundry to employ about 800 operatives. W. S. Vance of the St. Louis (Mo.) Plate Glass Co. can probably give information.

Windsor—Coal-mining.—Bowen Coal Co., reported incorporated last month, will succeed Bowen Bros., operating three coal mines with a daily capacity of 700 tons. It is proposed to arrange at once for the opening of additional mines. R. Bowen is president; John Bowen, vice-president and secretary; W. S. Bowen, treasurer, and T. R. Bowen, superintendent of mines.

NORTH CAROLINA.

Albemarle—Woodworking Plant.—Woodland Manufacturing Co. has been incorporated with an authorized capital stock of \$50,000 by W. P. Broome, R. A. Honeycutt, T. D. Kelley and others.

Asheville—Veneer Factory.—Asheville Veneer Co. is being organized with \$30,000 capital stock by W. G. Chandler and associates for the establishment of veneer factory.

Asheville—Bridge.—Nashville (Tenn.) Bridge Co. has contract at \$7750 for the construction of proposed Atkins-street bridge; to be of steel construction, with masonry piers and abutments, 300 feet long.

Balsam Grove—Mica Mines.—It is reported that C. H. Wolford will develop mica mines recently discovered. It is estimated that between 300 and 500 tons daily can be obtained.

Bryson City—Telephone System.—Chartered: Bryson City Telephone Co., with \$5000 capital stock, by R. L. Sandidge, J. L. Gibson and others.

Charlotte—Harness Factory.—Charlotte Leather Manufacturing Co. has been incorporated with \$100,000 capital stock by W. E. Shaw, R. B. Pharr and F. M. Redd to manufacture saddles, harness, etc.

Cherryville—Bag Factory.—J. P. Dellinger contemplates establishing plant for the manufacture of new jute bagging for cotton.

Elizabeth City—Furniture Factory.—Carolina Furniture Co. is being organized with \$25,000 capital stock by E. F. Aydtlett, T. G. Skinner and others to operate furniture factory.

Gibsonville—Cotton Mill.—Minneola Manufacturing Co. proposes increasing capital stock from \$40,000 to \$200,000. It operates 10,000 spindles and 500 looms.

Graham—Building-block Factory.—Eureka Building Block Co. has been incorporated with an authorized capital stock of \$25,000 by A. B. Nicholson, T. O. Pomeroy and E. S. Parker, Jr., to manufacture building blocks.

High Point—Clothing Factory, etc.—Merchants' Manufacturing Co. has been organized by J. W. Walker and J. W. Walker, Jr., to manufacture trousers, coats, shirts, boys' suits, etc. The manufacture of a line of patent suspenders is also being considered.

Lewiston—Supply Company.—J. N. Haggard and others have incorporated the Lewiston Supply Co. with \$5000 capital stock.

Lilesville—Water-power-Electrical Plant.—Hugh MacRae of Wilmington, N. C., and associates, it is reported, are arranging for the development of the Bluff Falls on the Pee Dee river, 12 miles from Lilesville. It is proposed to build a dam across the river and develop water-power to about 25,000 horse-power, which will be transmitted by electricity to Rockingham, Laurinburg, Florence, McColl's, Darlington and adjacent towns; Lockwood, Greene & Co., Boston, Mass., engineers in charge.

Lincolnton—Brick Works, etc.—McAlha Brick & Construction Co. has been organized by G. W. McAllister, C. H. Harrill and Sumney Alexander to manufacture brick, handle lime, cement and builders' material and en-

gage in construction work. Mr. Alexander will be secretary-treasurer.

Louisburg—Mattress Factory.—Tar River Mattress Co., J. W. Hollingsworth, manager, and R. G. Allen, secretary-treasurer, will manufacture mattresses, occupying a four-story building, 60x80 feet, and equipping for a daily output of 125. About \$10,000 will be invested. Mr. Hollingsworth was mentioned last week as arranging for the establishment of mattress factory.

Murphy—Light and Power Plant.—Murphy Light & Power Co. has increased capital stock from \$6000 to \$10,000.

Newton—Graphite Mines.—Southern Engineering Co. of Phoenix, Ariz., and Galeton, Pa., capitalized at \$500,000, is reported as arranging for the development of graphite properties in Catawba county.

Ramsey—Furniture Company.—Crescent Furniture Co. has been incorporated with \$10,000 capital stock to continue an established business. J. O. Forrester is secretary-treasurer.

Rameur—Woodworking Plant.—Novelty Wood Works Co. has been incorporated with an authorized capital stock of \$25,000. Wm. Wrightsell is president; J. W. Parks, secretary, and W. A. Ward, treasurer.

Rutherfordton—Saw-mill, Lath Mill and Grist Mill.—Charles B. Goforth, Lock Box 113, is erecting saw-mill with a daily capacity of 10,000 feet, 20,000-capacity lath mill and 100-bushel grist mill.

Selma—Knitting Mill.—M. C. Winston and associates will establish a knitting mill, capitalizing the enterprise at \$25,000.

Shelby—Brick Works.—J. F. Gaffney will enlarge brick works and install equipment for making sand and cement bricks. It is proposed to organize as Gaffney, Son & Kendall, with Clyde M. Gaffney, manager; J. F. Gaffney, secretary, and B. H. Kendall, treasurer; capital stock \$5000.

Shelby—Sash, Door and Blind Factory.—Cleveland Sash & Door Co. has been organized with \$10,000 capital stock by J. F. Gaffney and associates for the establishment of sash, door and blind factory; size and character of buildings not decided on. About \$7000 will be invested.

Tarboro—Hardware, Farm Implements, etc.—Peters Implement Co. has been incorporated with \$5000 capital stock to deal in hardware, farm implements, vehicles, harness, etc., steam and gasoline engines. R. B. Peters is president and treasurer; B. W. Brown, vice-president; W. B. Cummings, secretary, and Thomas H. Peters, manager; office, Lewis Building, 413 Main street.

Trenton—Land and Lumber Company.—Trenton Land & Lumber Co. has been incorporated with \$100,000 capital stock.

Wallace—Dry-kill.—Wallace Manufacturing Co., reported last week as to increase capital stock from \$10,500 to \$25,000, will erect a 15,000 capacity dry-kill.

Wilmington—Brick Works.—Chartered: Atkinson Brick Works, with an authorized capital stock of \$25,000, by E. P. H. Strunk and associates.

Wilson—Saw-mill.—It is reported that the Dennis-Simmons Lumber Co., operating plant at Elm City, N. C., is erecting a saw-mill with a daily capacity of 60,000 feet.

Winston-Salem—Publishing.—Chartered: Southern Home Publishing Co., with \$100,000 capital stock, by John L. Casper, G. L. Andre and M. D. Bailey, Jr.

SOUTH CAROLINA.

Columbia—Cotton-yarn Mill.—American Press Cloth Co.'s yarn mill, recently reported as to be built, will cost about \$100,000. It will include two-story building 200x60 feet, warehouses, etc., and machinery for manufacturing camel's-hair yarn. About 1300 spindles will be installed.

Easley—Cottonseed-oil Mill and Gin.—J. H. Miller, D. F. Bradley, R. F. Smith, Jasper Oates, Wm. McMahan and W. M. Hagood are organizing company with \$25,000 capital stock to erect a cottonseed-oil mill and cotton gin.

Greenville—Land Improvement.—Riverside Land Co. has been incorporated with \$25,000 capital stock for development of suburban site, 340 acres of land, recently purchased. H. J. Haynsworth is president and treasurer, and T. C. Williams, Jr., vice-president and secretary.

Greenwood—Ice Plant.—It is reported that the Greenwood Ice Co. is completing arrangements for increasing capacity of plant to 25 tons daily.

Laurens—Concrete-block Factory.—Snyder & Bishop, Spartanburg, S. C., are considering the establishment of plant for the manufacture of concrete blocks.

Rock Hill—Roller Coverings.—Rock Hill Roller Shop, W. W. Wilson, proprietor, has

established plant for covering mill rollers of all sizes.

Spartanburg—Knitting Mill.—McMillan Hosiery Co. is being organized with \$50,000 capital stock by A. C. Johnson and associates. It is proposed to begin the construction of building about March 1, and water-power will be used to generate the electricity to operate the machinery.

St. George—Cottonseed-oil Mill.—It is reported that a \$15,000 cottonseed-oil mill will be established, and Dr. John B. Johnston is promoting the enterprise.

TENNESSEE.

Blount County—Timber and Mineral Land. Great Smoky Land & Mineral Co., H. N. Camp, secretary-treasurer, Knoxville, Tenn., is the purchaser of the 17,000 acres of timber and mineral land in Blount county, mentioned last week. No definite plans for the development of the property has been decided on, as negotiations are now pending for its sale. If not sold, however, the owners will later arrange for its development. The tract is heavily timbered and underlaid with slate and iron ore.

Chattanooga—Steel Bridge.—Board of Public Works, A. L. Thomas, chairman, has extended the date for opening bids for the 11th-street bridge, previously mentioned, to February 13. Robert Hooke is city engineer.

Clairfield—Lumber Company.—Clairfield Lumber Co. has been incorporated with \$80,000 capital stock by W. B. Woodward of Washington C. H., Ohio; H. L. Grogan of Boston, Mass., and M. C. McCormick of Winchester, Ky.

Clarksville—Flour Mill.—Dunlop Milling Co., it is stated, will rebuild flour mill previously reported burned at a loss of \$250,000, and plans and specifications are being prepared for a plant doubling the former capacity; the mill building and warehouses to be of brick and concrete construction, and the elevator and storage-houses of concrete and steel.

Columbia—Phosphate Mines.—It is reported that arrangements will be made at once for the development of phosphate deposits on 500 acres of land owned by the Hughes estate, and surveys have been made by J. W. F. Hughes of Kansas showing that about 3,000,000 tons of phosphate is contained in the land. A grinding mill will be built and a railroad constructed from the Louisville & Nashville Railroad to the property, a distance of eight miles. G. W. Gifford of Nashville, Tenn., can probably give information.

Covington—Canning Factory.—A company is being organized for the establishment of tomato cannery. Daniel Fyfe is secretary.

Dickson—Spoke Factory.—I. R. Gibbs, S. G. Holland, Pitt Hensley, J. E. Gibbs, J. T. Holbrook, F. S. Hopkins and associates have incorporated the Dickson Spoke & Manufacturing Co. with \$10,000 capital stock to operate spoke factory.

Lewisburg—Lumber Plant.—Lewisburg Lumber & Manufacturing Co. has been incorporated with \$15,000 capital stock to operate saw and planing mill, manufacture building material, etc. As soon as site is secured a building 60x90 feet will be erected. C. E. Craig is president; Dr. T. C. Black, vice-president; J. W. Alford, secretary and general manager, and W. D. Orr, treasurer.

Loudon—Hosiery Mills.—Chartered: Loudon Hosiery Mills, with \$20,000 capital stock, by R. H. Bell, W. H. Harrison, G. J. Blair, M. R. Goans, C. P. Tallafiero, A. W. Ward and C. H. Bacon.

Memphis—Crematory.—The city is considering building a new crematory, and an appropriation of \$8000 will be asked for this purpose. Address Mayor Malone.

Memphis—Shoe Factory.—It is reported that the Carruthers-Jones Shoe Co. is arranging for the erection of an additional shoe factory in Chelsea; building to be two stories.

Memphis—Column Factory.—Memphis Column Co., reported last week as having purchased five acres of land in North Memphis on which to establish plant for the manufacture of wood columns, will have a daily capacity of 600 turned colonial columns. It is proposed to erect the following buildings: Main building, 50x50 feet; dry-kill, 20x80 feet; engine and boiler-room, 30x40 feet, and two storerooms, 40x80 feet each.

Memphis—Cold-storage Plant.—J. N. Oliver will erect a 10-story building, 150x300 feet, of brick and stone, at a cost of \$300,000, which will be equipped with the most modern and scientific system of refrigeration sufficient for 800,000 cubic feet of cold-storage space. Memphis Cold Storage Warehouse Co. is being incorporated with \$300,000 capital stock by J. N. Oliver, Ben H. Ashner, T. C. Guinee, A. S. Barboro, M. E. Carter and associates to lease and operate the plant.

Memphis—Car-wheel Foundry.—American Car & Foundry Co., George L. Henrion, superintendent, states there is no truth in the report mentioned last week that a car-wheel foundry would be erected.

Memphis—Boiler Plant.—Memphis Consolidated Gas & Electric Co. states there is no truth in the report mentioned last week that a \$20,000 boiler plant would be erected.

Milan—Box-shook Factory.—It is reported that the Milan Shook Co. will rebuild plant reported burned last week at a loss of \$6000.

Nashville—Tobacco Factory.—Nashville Tobacco Co. has increased capital stock from \$20,000 to \$120,000. Additional machinery has been installed for increasing the capacity of the plant.

Nashville—Telephone Equipment, etc.—At the stockholders' meeting of the Cumberland Telephone & Telegraph Co. held in Hopkinsville, Ky., an increase of \$3,300,000 capital stock was voted. As recently mentioned, additional long-distance lines and exchanges will be constructed and the exchanges and lines in the States of Tennessee, Kentucky, Mississippi, Louisiana, etc., will be added to. It is also stated that a \$30,000 plant will be established at Nashville for the manufacture of everything used.

Nashville—Carbon Paint.—Nashville Carbon & Oil Co., reported last week as making improvements to plant, is installing additional equipment for the manufacture of carbon paint, increasing the capacity to 20 tons of dry pigment daily. About \$100,000 will be expended.*

Nashville—Street-paving.—It is reported that plans and specifications are being prepared for paving various streets; W. W. Southgate, city engineer.

Nashville—Foundry.—Nashville Machine Co. has increased capital stock from \$50,000 to \$100,000. It is reported that a foundry will be erected at a cost of \$50,000.

Nashville—Lumber Company.—Chartered: Gayoso Lumber Co., with \$50,000 capital stock, by John B. Ransom, A. B. Ransom, W. A. Ransom, R. T. Wilson and Charles R. Ransom.

Nashville—Hardware Company.—D. T. Crockett, Paul O'Connor, L. C. Bryson and Mizell Bryson have incorporated the Nashville Hardware Co. with \$10,000 capital stock.

Trenton—Machine Works, etc.—Trenton Machine Works & Supply Co. has increased capital stock from \$5000 to \$12,500.

TEXAS.

Beaumont—Dynamite Factory.—It is reported that a plant for the manufacture of dynamite will be established. L. F. Daniels can probably give information.

Beaumont—Irrigation Plant.—Beaumont Rice & Canal Co., Box 415, reported incorporated last week with \$100,000 capital stock, will irrigate 2500 acres of rice land. Next fall it may be decided to install another pumping-plant relief; E. K. Failor, secretary and general manager.*

Beaumont—Cold-storage Plant.—Chartered: Beaumont Cold Storage Co., with \$10,000 capital stock, to operate cold-storage plant previously reported to be erected by the Stedman Fruit Co. Edward Stedman is president; W. H. Stedman, vice-president, and Jerry Stedman, secretary-treasurer.

Beaumont—Silk Mill.—H. Otsuki of Houston, Texas, and M. Asal of Beaumont have leased building and will install a colony of silkworms, the product of which will be manufactured. They will install machinery for separating the silk fiber from the cocoons, weaving it into thread and then into various articles. Machinery has been purchased.

Dallas—Grain Mill.—Powhatan Milling Co. has been incorporated with \$20,000 capital stock to operate mill for the manufacture of grain products, such as meal, bran, chops, breakfast food, etc. Site has been purchased and building will be erected with a frontage of 175 feet, which will be equipped for a daily capacity of three cars. D. E. Crosland is president and treasurer; D. C. Summers, vice-president and manager, and W. W. McCullough, secretary.

Bonham—Road Improvements.—Reports state that Pannin county will vote on the issuance of \$150,000 of bonds for road improvements. Address County Clerk.

Burnet—Bridge Construction.—Burnet county has voted affirmatively the proposed bond issue for the construction of three bridges in the county. Address County Clerk.

Fort Worth—Glass Factory.—St. Louis (Mo.) parties propose establishing glass factory, construction work to begin about May 1. B. B. Paddock, secretary Board of Trade, can give information.

Denison—Building Company.—Empire Building Co. has been incorporated with \$100,000

capital stock by Edwin Clark, John J. Broderick and John T. Suggs.

Fort Worth—Tank Works.—Texas Tank & Culvert Co. has incorporated with \$30,000 capital stock to manufacture tanks, cisterns, etc.; incorporators, G. M. Bowie, R. B. Milliken, Willard Burton and W. B. Johnson.

Galveston—Sugar-cane Cultivation.—Chenango Plantation Co. has incorporated with \$25,000 capital stock to grow and sell sugarcane; incorporators, I. H. Kempner, Daniel Kempner and Bassett Blakey.

Galveston—Metallic Packing.—Rhodes Improved Metallic Packing Co., reported incorporated last week with \$30,000 capital stock, will manufacture piston and valve-stem packing.

Galveston—Sewerage System.—City has completed arrangements for the construction of a vitrified-pipe sewer in alley between Avenues J and K and 13th street to Avenue M, and bids for the work will be received until February 15; John D. Kelley, city secretary.*

Harlingen—Irrigation Plant.—American Rio Grande Land & Irrigation Co., T. W. Carter, president, 114 North 4th street, St. Louis, Mo., has about completed arrangements for the installation of machinery for a steam-driven electric-transmission pumping plant for irrigation services, and bids for same will be received until March 1 by Chester B. Davis, engineer.*

Houston—Umbrella Company.—C. L. Stewart, R. P. Cole and S. S. Gardner have incorporated the Universal Umbrella Co. with \$5000 capital stock.

Houston—Roundhouse and Shops.—Houston, Sabine & Red River Railway Co., it is reported, will build roundhouse and shops in East Houston on land owned by the East Houston Development Co., a recent incorporation for development purposes. Edward Kennedy is vice-president and general manager of railroad company.

Italy—Implement Company.—Chartered: Italy Implement Co., with \$10,000 capital stock, by L. F. Alby of Italy, Stanley Crabb, O. L. Oldham of Dallas, Texas, and D. B. McCall of Waxahachie, Texas.

Llano—Iron Mines and Manufacturing.—It is reported that B. F. Yonkum, chairman of the executive committee of the St. Louis & San Francisco Railroad, offices at 71 Railway Building, New York city, has purchased the Llano iron mountain in Llano county, near Llano, and will develop the property with the ultimate intention of building plants for the manufacture of iron and steel.

Lufkin—Saw-mill.—Carter Lumber Co., J. Press Carter, president, Houston, Texas, has purchased, it is reported, the McConico mill and timber land. Arrangements will be made at once for operating the mill and developing the tract, together with a recent purchase of 7000 acres made by the company.

Marshall—Gas Plant.—J. L. Breathwit, R. D. Elmore and associates have applied for franchise to establish gas plant.

Marshall—Rope and Twine Factory.—Pope & Sawyer contemplate engaging in the manufacture of cotton rope and twine.*

Muldoon—Kaolin Lands.—It is reported that the Atlantic Efronite Co. has leased from H. Leitenberg lands near Muldoon containing kaolin and fireproof-clay deposits, and arrangements will be made for developing same.

Palestine—Oil and Mineral Lands.—Chartered: Anderson County Oil & Mineral Co., with \$5000 capital stock, by G. P. Stewart, A. Sawyers, W. B. Johnson, L. Durr, J. W. Ozment, R. E. Erwin and associates, to develop oil and mineral lands.

Paris—Oil Company.—A company is being organized with \$100,000 capital stock by W. H. Greenhaw, O. P. Erwin, Clement Few, T. H. Griffiths, J. M. Long and associates to promote the organization of oil-development companies. It is proposed to acquire all of the W. H. Greenhaw leases around Paris and in Red River county, also property at other places.

Pecan Gap—Telephone System.—North Texas Telephone Co. has increased capital stock from \$5000 to \$10,000.

Port Arthur—Woodworking Plant.—Port Arthur Manufacturing Co. has been incorporated with \$5000 capital stock by V. C. Harrell, J. W. Gorin and H. C. Stearns to operate woodworking plant.

Quanah—Cottonseed-oil Mill.—It is proposed to establish a cottonseed-oil mill, and J. B. Goodlet is said to be interested.

San Angelo—Ice Plant.—J. T. Neal and W. D. Fuller will establish ice plant at a cost of about \$10,000.

San Antonio.—Collins-Guenther Company has increased capital stock from \$50,000 to \$100,000.

Terrell—Peanut Foods.—It is reported that Paul E. Williams, representing a Paris (Texas) company, is investigating with a view to locating plant for the manufacture of peanut butter, confections, etc.

Walnut Springs—Railroad Repair Shops and Roundhouse.—It is reported that the Texas Central Railroad will rebuild machine shops and roundhouse, and plans and specifications are being prepared. C. Hamilton, Waco, Texas, is general manager.

Wichita Falls—Broom Factory.—Wichita Broom Manufacturing Co. has been incorporated with \$5000 capital stock by C. W. Wilson, B. J. Bean, T. B. Noble and W. L. Robertson.

Wichita Falls—Grain Elevator.—Hardin Grain & Elevator Co. will let contract February 15 for a 30,000-bushel crib elevator; plans and specifications on file at the First National Bank. Usual rights reserved.

Yorktown—Electric-light and Ice Plant.—Franz Koenig of Moulton, Texas, will erect an electric-light and ice plant.

VIRGINIA.

Ashland—Land Improvement.—Chartered: College Place Improvement Corporation, with G. W. M. Taylor of Oaklette, Va., president; J. Ross McNeal of Garysburg, N. C., vice-president, and W. M. McNeal of Norfolk, Va., secretary-treasurer; authorized capital stock \$5000.

Edinburg—Water-works.—Town has petitioned the legislature for authority to issue bonds for the construction of water-works; C. H. Fadeley, mayor.

Elkton—Telephone System.—Elkton & Shenandoah Mutual Telephone Co. has incorporated with an authorized capital stock of \$1000 to construct and operate telephone system. G. M. Harnsberger of Shenandoah, Va., is president, and C. H. J. Bloose of Elkton, secretary-treasurer.

Hampton—Gas Plant.—Hampton, Phoebus & Old Point Gas Co., recently reported incorporated, has applied for franchise for the construction of gas plant.

Manchester—Shoe Factory.—Wingo, Ellett & Crump will let contract February 15 for the construction of proposed factory building; to be of brick and steel construction, entirely fireproof, and cost \$60,000. A heating and lighting plant will be installed. It is proposed to equip the plant at a cost of \$40,000 for a capacity of 3000 pairs of shoes daily. The erection of an additional factory of similar construction adjoining is also being considered, which when completed will increase the output to 5000 pairs of shoes daily. When all the improvements are completed it is the company's intention to remove the plant now being operated at Fredricksburg, Va., to Manchester.

Norfolk—Lumber, etc.—Incorporated: Metzger & Matthews, with \$25,000 capital stock, to deal in lumber, machinery, etc. S. T. Matthews is president, and Nathan Metzger, secretary-treasurer.

Norfolk—Lumber Company.—Raper-Jackson-White Company has incorporated with \$100,000 capital stock to deal in lumber. D. W. Raper is president; W. A. Jackson, vice-president, and J. Elmer White, secretary-treasurer.

Norfolk—Mill Supplies, Machinery, etc.—Perry Machine Works has been incorporated with \$25,000 capital stock to deal in builders' and mill supplies, engines, machinery, etc. T. A. Perry is president; William T. Shannonhouse, vice-president; B. C. Pollard, secretary, and G. E. Stevenson, treasurer.

Pennington Gap—Coal Mines.—Monarch Coal & Coke Co., reported organized last week with \$50,000 capital stock, will develop 1000 acres of coal land in Lee county and will install equipment for a daily output of 1000 tons. About \$25,000 will be invested; U. K. Custred, engineer in charge. C. D. Caldwell is president; R. L. Blevins, vice-president, and J. B. Baumgardner, secretary-treasurer; main office, Bristol, Va.-Tenn.*

Portsmouth—Water-works.—City has asked the legislature (as mentioned previously) for permission to issue \$500,000 of bonds for the purpose of either buying the present water-works or the construction of plant; Bascom Sykes, city engineer.

Pulaski—Publishing.—Southwest Publishing Co. has incorporated with \$3000 capital stock to engage in publishing business. John S. Draper is president; George R. Cheves, vice-president, and J. N. Hosang, secretary-treasurer.

Roanoke—Distillery.—Casper-Thrash Company, Inc., is arranging for the erection of proposed buildings, to include a four-story distillery building, 75x50 feet, of brick and frame; two steam-heated warehouses, and three-story bottling-house, 50x100 feet. About \$30,000 will be invested. Distillery will have

a daily capacity of 500 bushels. Neither engineer nor architect has been selected. J. L. Casper of Winston-Salem, N. C., is president, and P. H. Thrash of Asheville, N. C., secretary-treasurer. This company has been previously mentioned to remove distillery from Winston-Salem, N. C., to Roanoke.*

Saltville—Gypsum Mines.—Southern Gypsum Co., reported in December as being organized with \$500,000 capital stock for the development of gypsum deposits on the Halls river, five and one-half miles from Saltville, will erect a calcining plant having a daily capacity of 200 tons of finished material per day of 10 hours. Plans and specifications for the necessary buildings have been completed. W. E. Cochran, Greensboro, N. C., is manager; main office, Room 505, City National Bank Building, Greensboro, N. C.

WEST VIRGINIA.

Charleston—Steel Plant.—Baldwin Steel Co., manufacturer of high-grade crucible steel, with offices at 107 John street, New York, will build a new plant, and contemplates locating it in the gas fields of West Virginia.

Grafton—Coal Mines.—Davis Coal Mining Co. has incorporated with \$10,000 capital stock to mine coal; incorporators, William R. Davis, Richard Gestell, Jr., of Grafton, Thomas B. Davis, William B. Wolf of Keyser, W. Va., and associates.

Haywood—Real Estate.—Martin Bros. Company has been incorporated with \$25,000 capital stock by Charles E. Martin, M. G. Martin, Albert W. Martin and others to take over and operate the business of Martin Bros.

Keyser—Cold-storage Plant.—V. F. Alkire, W. W. Woods, H. G. Woolf, W. H. Griffith and O. A. Hood have incorporated the Merchants' Cold Storage Co. with \$50,000 capital stock to establish cold-storage plant.

Masontown—Coal Mines and Coke Ovens.—George Whyel, Harry Whyel, I. W. Semans of Masontown and W. C. Magee of Pittsburgh, Pa., have purchased 452 acres of coal land at Masontown and formed the Sterling Coal & Coke Co. with \$500,000 capital stock for its development. It is stated that 300 coke ovens will be built at once, which will later be increased to 500. Mr. Magee will be president; Mr. Whyel, vice-president and general manager, and Mr. Semans, treasurer.

Monongalia County—Coal-mining.—Davis Coal & Coke Co. of Davis, W. Va., and New York, it is reported, has purchased 8000 acres of coal land in Monongalia county at \$800,000.

Morgantown—Lumber Mill.—F. W. Crane Lumber Co. has been incorporated with \$25,000 capital stock by C. F. Sutherland, B. F. Crane, F. W. Cramer and associates to manufacture lumber.

New Cumberland—Oil and Gas Wells.—The L. R. C. Oil & Gas Co. has been incorporated with \$8000 capital stock by John Linduff, M. L. Carson, Oliver C. Reynolds and associates to drill for oil and gas.

New Martinsville—Telephone System.—C. A. Lowther, Lina R. Lowther, C. F. Lowther, Anna L. Fitch and W. R. Fitch have incorporated the Enterprise Telephone Co. with \$50,000 capital stock.

Parkersburg—Oil and Gas Wells, etc.—Highland Oil, Gas & Carbon Co. has been incorporated with \$300,000 capital stock by L. R. Via, M. G. Zinn of Parkersburg, C. H. Stolzenbach, Joseph S. Brown and A. C. Ellis of Pittsburgh, Pa., to drill for oil and gas.

Wheeling—Brewery.—Citizens' Brewing Co., recently organized with \$200,000 capital stock by Herman G. Welske, Andrew Korn, W. C. Eberts, Hiram Teter of Wheeling and J. W. Luther of Indiana, Pa., to operate brewery, has purchased site on which to erect necessary buildings.

INDIAN TERRITORY.

Tulsa—Public Improvements.—It is reported that the city will vote February 26 on the issuance of \$70,000 additional bonds for the completion of sewerage system and the erection of two school buildings. Address The Mayor.

OKLAHOMA TERRITORY.

Coldwater—Elevator Company.—Chartered: Coldwater Elevator Co., with \$10,000 capital stock, by Charles L. Leicht, A. F. Herman and R. O. Childers.

Drummond—Mineral Development, etc.—Chartered: Drummond Mineral, Coal & Gas Town Development Co., with \$100,000 capital stock, by S. T. Allen, W. H. Stewart, G. M. Findelbinder, S. Wires, W. R. Pierson, J. T. McEwen and D. E. Messenger.

El Reno—Electric Plant.—Bidwell Electric Co. has been incorporated with \$2,000,000 capital stock by H. L. Fogg of El Reno, Beason Bidwell and G. W. Johnston of Chicago, Ill., to operate electric plant.

Enid—Flour Mill.—Enid Mill & Elevator Co. has begun the erection of addition to flour mill, which will be equipped for increasing the capacity from 400 to 1000 barrels daily.

Guthrie—Cotton Mill.—It is reported that J. E. Douglass and W. H. Coyle will build a cotton mill.

Guthrie—Gas Plant.—Shawnee (O. T.) Gas Co., it is reported, has purchased site on which to erect plant.

Lawton—Gas Plant.—Lawton Gas Co. has been incorporated with \$100,000 capital stock by L. M. Greensman of Lawton, J. W. Planck of South McAlester, I. T., and Northrop Moore of Kansas City, Kan., to operate gas plant. Messrs. Planck and Moore were mentioned in December as having secured franchise to furnish the city with natural and manufactured gas.

Perry—Water-works Improvement.—City has voted the proposed \$25,000 bond issue for improvements to water-works system and erecting standpipe. Address The Mayor.

Prague—Hardware.—Incorporated: The Wade-Branch Hardware Co., with \$10,000 capital stock, by L. R. Wade, W. R. Branch and associates.

BURNED.

Abbeville, S. C.—Seaboard Air Line Railway Co.'s shops and roundhouse; loss \$100,000. W. L. Seddon, Portsmouth, Va., is chief engineer.

Athens, Ga.—Science Hall of the State Normal School; loss \$30,000. Address The President.

Ben Franklin, Texas.—North Texas Company's cotton gin.

Centerville, Md.—John R. Cook's machine shops and iron foundry; loss \$3000.

Chattanooga, Tenn.—Central Lumber Co.'s planing mill; loss \$15,000.

Cordele, Ga.—Southern Oil Co.'s plant; loss \$50,000.

DeVall Bluff, Ark.—A. T. Cook's saw-mill; loss \$2500.

Dundee, Miss.—West & Sledge's cotton gin; loss \$5000.

Greenville, Miss.—Greenville Steam Laundry, owned by Fletcher & Harris; loss \$4000.

Houma, La.—David F. Gray's sugar refinery; loss \$10,000.

Lucia, N. C.—J. M. McIntosh's flour, grist and saw-mill, cotton gin, etc.

Prescott, Ark.—Prescott Furniture Co.'s factory; loss \$25,000.

Rich Hill, Mo.—Flanagan Mill & Elevator Co.'s plant; loss \$250,000.

Rochelle, La.—Louisiana Lumber Co.'s saw-mill and slab burner; loss \$125,000.

Shreveport, La.—Rutherford Mill & Elevator Co.'s plant.

Spencer, N. C.—Southern Railway Co.'s blacksmith shop; loss \$20,000. H. B. Spencer, Washington, D. C., is general manager.

Stevenson, Md.—Thomas Jauney's residence; loss \$32,000.

Timpson, Texas.—Jennings Hotel, loss \$7000; Capitol Hotel, loss \$4500.

Valdosta, Ga.—Henderson-Cranford Buggy Co.'s factory; loss \$90,000. Valdosta Steam Laundry Co.'s plant; loss \$2000.

Winnfield, La.—C. H. Elliott's dry-kilns.

BUILDING NOTES.

*Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery, Proposals and Supplies Wanted."

Ada, I. T.—School Building.—Brevard Training School, Dr. Sam Steele, president, has secured site on which to erect a \$15,000 school building.

Amarillo, Texas.—School Building.—School Board, R. B. Newcombe, secretary, will receive plans and specifications until February 12 for a two-story brick school building with stone trimmings to cost about \$20,000. Modern plumbing, steam-heating plant, etc., are to be installed.

Asheville, N. C.—Telephone Building.—Central Carolina Construction Co. of Greensboro, N. C., has contract at \$13,000 for the construction of telephone building (previously reported) for the Asheville Telephone & Telegraph Co. after plans by Harry Wilson Tyler; to be three stories, 30x70 feet.

Atlanta, Ga.—Store Building.—F. J. Coolidge & Bro., Forsyth street, will erect six two-story store buildings.*

Augusta, Ga.—School Building.—Board of Education has adopted plans by Louis Goodrich for school building previously reported to be erected in the Fifth ward; the build-

ing to be two stories, 225x100 feet, of stone and brick.

Barton Heights, Va.—School Building.—Albert F. Hewitt, Richmond, Va., is preparing plans for school building previously reported to be erected; to be of brick, equipped with steam heat, electric lights, etc., and cost \$20,000.

Bluefield, W. Va.—Opera-house.—A stock company is being organized for the erection of opera-house for which T. T. Carter of Bluefield, W. Va., was mentioned last week as preparing plans; to be three stories, 50x110 feet, of brick, and cost about \$15,000. Steam heat, electric lights and one freight elevator will be installed. Bids for the construction will be opened about March 1.

Bluefield, W. Va.—Skating Rink.—Bluefield Amusement Co. is receiving bids for the erection of roller-skating rink; plans on file at Kelley & Moyer's.

Brenham, Texas.—College Building.—Bids will be opened February 20 for building to be erected by Blinn Memorial College after plans by C. H. Page, Jr., Austin, Texas; building to be two stories, 73x157 feet, of brick and concrete.

Brenham, Texas.—School Building.—Building Committee, John Strelt, chairman, will open bids February 20 for the erection of a brick school building. Plans can be seen or applied for at the office of C. H. Page, Jr., architect, Austin and Houston, Texas. Certified check made payable to H. Dietz, president board of trustees, must accompany each bid. Usual rights reserved.

Bryan, Texas.—Hotel.—Bids are being received for the erection of hotel building mentioned last week; to be 75x150 feet, of fireproof construction, equipped with steam heat, electric lights and cost \$30,000. Steele & Fountain, Houston, Texas, prepared the plans. J. W. Howell is owner. It is proposed to organize stock company for its operation.

Cartersville, Ga.—Jail Building.—Bartow county has let contract for repairs to be made to the county jail, previously mentioned; W. C. Walton, county clerk.

Chester, S. C.—Bank Building.—The Exchange Bank will remodel building during the summer, and wants to correspond with architects relative to plans and specifications. M. S. Lewis is cashier.

Cotter, Ark.—Masonic Temple.—G. W. Vaughan of Segal, Ark., has contract for erection of proposed Masonic Temple for King Hiram Lodge No. 578; cost \$5000.

Dallas, Texas.—Union Depot.—Reports state that arrangements are being completed by the St. Louis & San Francisco Railroad, J. F. Hinckley, St. Louis, Mo., chief engineer, and other roads entering Dallas for the erection of proposed union depot.

Dallas, Texas.—Dwelling.—E. S. Perryman is having plans prepared by C. A. Gill for the erection of \$10,000 residence to replace structure recently burned.

Dallas, Texas.—Sanitarium, Bathhouses, etc.—It is reported that Dr. J. G. Mills of Marlin, Texas, has purchased property in North Dallas on which is located the Gill mineral well, and arrangements will be made at once for the establishment of health resort. A three-story sanitarium 150x50 feet and a bathhouse 75x150 feet will be erected.

Dallas, Texas.—Store Building.—Louis Lipschitz of Tyler, Texas, has commissioned Sanguinet, Staats & Hill to prepare plans for a five-story building 65x200 feet, to be erected at a cost of \$100,000 and occupied by the Harris-Lipschitz Dry Goods Co.

Elizabeth City, N. C.—Opera-house.—W. C. Linthicum, Durham, N. C., is preparing plans for building reported last week to be erected by T. G. Skinner of Hertford, N. C.; to be 100x80 feet, of fireproof construction, and cost about \$30,000.

Falfurrias, Texas.—Building.—Bids will be received until February 15 at the office of Alfred Giles, architect, San Antonio, Texas, for bank, mercantile and office building for the Falfurrias Mercantile Co.; plans and specifications on file at architect's office, San Antonio, Texas, also at office of company, Falfurrias.

Fordyce, Ark.—Bank Building.—E. L. Koonce has contract to make improvements to building for the Bank of Fordyce after plans by C. L. Thompson, Little Rock, Ark.

Fort Worth, Texas.—Business Building.—George T. Reynolds has secured permit for the erection of a three-story brick and stone building to cost \$60,000.

Glasgow, Ky.—Bank Building.—A new bank organized by L. W. Preston and associates will erect building.

Greensboro, N. C.—Apartment-house.—The apartment-house for which G. Will Armfield was mentioned last week as having contract is being erected by S. L. Gilmer and Miss

Nina Brown, and not E. L. Gilmer as reported.

Greenville, Texas.—School Building.—The city will vote February 10 on a \$17,000 bond issue for the erection of school building; A. H. Hefner, mayor.

Hammond, La.—Bank Building.—Bank of Hammond is having plans prepared by B. S. Galleys for the erection of a two-story stone bank building.

High Point, N. C.—Depot.—Central Carolina Construction Co., Greensboro, N. C., has contract to erect proposed \$25,000 passenger station for the Southern Railway.

Jacksonville, Fla.—Warehouses.—It is reported that the Seaboard Air Line Railway will erect two brick warehouses, one 315 feet and one 515 feet in length. W. L. Seddon, Portsmouth, Va., is chief engineer.

Junction, Texas.—School Building.—Town has voted affirmatively the proposed bond issue for the erection of school building. Address Town Clerk.

Kansas City, Mo.—Hotel.—W. H. Meierstein has purchased site on which a \$30,000 hotel will probably be erected.

Kansas City, Mo.—Clubhouse.—Carl A. Nilsson, Kemper Building, has contract to erect clubhouse for the Evanston Golf Club, for which Root & Siemens, Postal Telegraph Building, was previously reported as preparing plans; clubhouse to be 110x136 feet, locker-house 85x46 feet. A steam-heating plant will be installed in clubhouse and furnace in locker-house. Electric lights, etc., will also be installed; cost \$31,000. G. W. Haverfield, 527 New York Life Building, is secretary.

Kansas City, Mo.—Apartment-house.—A. G. Cruzan, 208 North White street, has contract to erect apartment-house for A. O. Thompson, mentioned last week; to be seven stories, 45x115 feet, equipped with steam heat, gas and electric fixtures, and cost \$75,000. Chas. A. Smith, Dwight Building, prepared the plans.

Kirbyville, Texas.—Theater.—R. C. Meyers, previously reported as to build theater, will erect a three-story building 75x100 feet, of fireproof construction, costing \$15,000. Architect has not been engaged.

Knoxville, Tenn.—Church.—It is proposed to erect a church to cost \$25,000 or \$30,000, and A. J. Cloyd, chairman building committee, 409 Broadway, wants to correspond with architects relative to plans and specifications.

Laurinburg, N. C.—Dwelling.—Richards & Cooper, Wilmington, N. C., have completed plans for Judge W. H. McNeal's proposed two-story residence.

Little Rock, Ark.—City Hall and Auditorium.—Charles L. Thompson has been engaged to prepare plans for city hall and auditorium previously reported to be erected at a cost of \$150,000.

Little Rock, Ark.—Reform School.—State Penitentiary Board has commissioned Frank W. Gibb to prepare plans and specifications for proposed building for the State Reform School, for which \$30,000 was previously reported appropriated.

Little Rock, Ark.—Church.—Second Baptist Church is arranging for the erection of \$30,000 edifice on site recently purchased; Dr. John T. Christian, pastor.

Lynchburg, Va.—Church.—Reports state that Holy Trinity Lutheran congregation will erect edifice to cost about \$10,000. J. C. Peery is pastor.

Louisville, Ky.—College Building.—Construction work has begun on proposed building for the Presbyterian Theological Seminary of Kentucky after plans by Dodd & McDonald; building to be of ordinary construction, equipped with steam and hot-water-heating plant, electric lights, etc., and cost \$80,000. Rev. P. H. Hoge, D. D., Broadway and Fourth avenue, is chairman building committee.

Macon, Ga.—Dormitory and Dining Hall.—A 160-room brick building for dormitory and dining hall will be erected by Mercer University at a cost of \$50,000.

Memphis, Tenn.—Office Building.—McGill Building Co. has been incorporated with \$25,000 capital stock by R. A. McGill, S. M. Neely and associates for the erection of the McGill office building, mentioned last October at some length in these columns. W. A. Sutherland of Chicago, Ill., is the contractor, and A. B. Groves of St. Louis, Mo., architect.

Mobile, Ala.—Hotel.—The New Battle House Company is being organized with \$500,000 capital stock for the erection of hotel on the site of Battle House, previously reported burned.

Mobile, Ala.—Building.—Contract will be let at once for the erection of building for Cleveland Bros. after plans by Geo. D. Hurlburt; to be three stories of pressed brick and stone and cost \$9000. Electric elevator will be installed.

Montgomery, Ala.—Jail Building.—B. C. Bynum Construction Co. has been awarded contract for remodeling jail building for Montgomery county, for which plans and specifications were prepared by Frank Lockwood.

Nevada, Mo.—Courthouse.—Vernon county has voted affirmatively the \$75,000 bond issue previously reported for the erection of courthouse. Address County Judge.

Nevada, Mo.—School Building.—City will vote on the issuance of \$50,000 of bonds for the erection of high-school building. Address The Mayor.

New Orleans, La.—Skating Rink.—Crescent Roller Rink Co. has been incorporated with \$10,000 capital stock to conduct a roller-skating rink. Walter E. Orthwein is president; Arthur Garrels, vice-president, and Foster DeBays, secretary-treasurer.

New Orleans, La.—Bank and Office Building.—Plans by Diboll & Owen have been adopted for building previously reported to be erected by the Canal-Louisiana Bank & Trust Co. at a cost of \$600,000; to be nine stories, of fireproof construction, with pressed brick and terra-cotta trimmings. T. P. Thompson is chairman of building committee.

New Orleans, La.—Bank Building.—James Geary has contract to erect proposed building for the Carrollton Trust & Savings Co. after plans by Sam Stone, Jr.; building to be of brick and stone, 30x65 feet, and cost \$15,000.

Newport News, Va.—Church.—It is reported that the Newport News Baptist Church, J. W. Porter, D.D., pastor, will arrange at once for rebuilding edifice reported burned last week. A. C. Powell is chairman of building committee.

Norfolk, Va.—Apartment-house.—L. B. Whitley will erect an apartment-house.*

Orange, Texas.—Business Building.—George McDonald & Co. are preparing plans for a business building 20x80 feet of pressed brick with plate-glass front for R. Sokolski.

Pensacola, Fla.—Union Station.—It is reported that the Louisville & Nashville Railway will rebuild depot. W. H. Courtenay, Louisville, Ky., is chief engineer.

Raleigh, N. C.—Church.—Bids will be received until March 1 for remodeling the First Baptist Church; approximate cost \$16,000. Bond is required. Plans on file at office of Chas. W. Barrett, architect, Raleigh; John E. Ray, chairman building committee.

Richmond, Va.—Dwelling.—R. D. Harland has purchased site on which to erect \$5000 residence.

Richmond, Va.—Store Building.—H. W. Rountree has purchased site on which to erect a three-story building, 60x140 feet, of mill construction, equipped with electric and gas lights.

Richmond, Va.—Jail Building.—Plans and specifications by the Stewart Iron Works, previously reported as having been adopted by the board of supervisors of Henrico county for proposed \$50,000 jail building, have been revised by Charles K. Bryant; building to be two stories of brick with stone trimmings and galvanized-iron or copper cornice.

Russellville, Ark.—Bank Building.—Mann & Downey of Little Rock, Ark., will prepare plans and specifications for a two-story brick building 27x85 feet for Bank of Russellville, replacing structure recently burned.

Scranton, Miss.—Business Building.—Saml. Seaton of Fort Worth, Texas, has purchased site on which to erect a \$12,000 brick business building.

Sewell's Point, Va.—Pier.—Jamestown Exposition Co., Norfolk, Va., will receive bids until February 17 for the construction of landing pier in accordance with drawings and specifications, which may be obtained on application to the associated architects and engineers, third floor, New Century Building, Norfolk, Va. A deposit of \$10 will be required for each set. If returned within five days the entire deposit will be returned, but if kept over five days a charge of \$5 for each set so kept will be charged. A certified check for \$3000 must accompany each bid. Usual rights reserved.

Shelby, N. C.—School Building.—Plans have been completed by J. M. McMichael, Charlotte, N. C., for \$10,000 high-school building, previously reported to be erected by the Kings Mountain and Sandy Run Baptist Association, and bids for the construction are now being received by Rev. J. V. Devenny, R. F. D. No. 3, who is chairman of building committee.

Spartanburg, S. C.—Church.—Keating & Proffitt are preparing plans for proposed edifice for the Lutheran Church, Dr. S. T. Hallman, pastor; the building to be of brick and stone, 45x50 feet.

Tifton, Ga.—Hotel.—I. W. Myers is ar-

ranging for rebuilding the Hotel Sadie, previously reported burned. It is proposed to erect a 60-room hotel of brick and stucco, equipped with steam heat and electric lights; cost \$100,000.

Tifton, Ga.—School Building.—L. A. Hargreaves, city clerk, will receive bids until March 5 for the construction of a two-story brick high-school building in accordance with plans and specifications on file with E. P. Bowen, Tifton, and at office of Lockwood Bros., architects, Columbus, Ga. Certified check for \$150, made payable to S. H. Clatt, mayor, must accompany each bid. Usual rights reserved.

Washington, D. C.—Dwelling.—Edward L. Goodwin will erect dwelling at 1865 Kalorama road N. W.; three stories, 25x78 feet; brick with stone and galvanized-iron trimmings; tin roof; ornamental iron work; electric wiring and fixtures; sanitary plumbing; heating system not in contract. Fissell & Wagner, Home Life Building, 15th and G streets N. W.; George C. Hough, Corporan Building, Pennsylvania avenue and 15th street, and Perry Cleveland are estimating on the construction; bids to be in February 11; Spelden & Spelden, architects, 705 G street N. W.

Washington, D. C.—Auditorium.—The Washington Auditorium Co., has applied to Congress for incorporation with capital stock of \$1,000,000 for the purpose of purchasing site and erecting auditorium. Henry L. West, District commissioner; C. C. Glover, Riggs National Bank; George E. Hamilton, 1751 New Hampshire avenue; A. B. Browne, 1528 P street, and Gen. John M. Wilson, 1773 Massachusetts avenue, are among those interested in the project.

Washington, D. C.—Dwelling.—John Mitchell has awarded contract to T. L. Lewis, 51 U street N. W., for the construction of dwelling at 1357 Park street; three stories, 20x57 feet; brick with stone trimmings; tin roof; gas fixtures; sanitary plumbing; heating system; cost about \$9000; Edward O. Volland, architect, 418 L street N. W.

Washington, D. C.—Suburban Development.—Henry W. and G. W. Offutt, Tenleytown, D. C., have purchased 21 acres of land at Tenleytown, D. C., and will develop it for suburban residential purposes.

Washington, D. C.—Apartment-house.—Carl B. Keferstein, architect, 734 15th street N. W., has purchased house at 321 N street N. W., and will make extensive additions to the building, converting it into an apartment-house.

Washington, D. C.—Dwellings.—John H. Nolan, builder, 1413 G street N. W., will erect two dwellings on Connecticut avenue between Bancroft street and LeRoy Place; three stories and basement, 50x70 feet; brick with stone base; slate roof; electric wiring and fixtures; sanitary plumbing; heating system; Wood, Donn & Deming, architects, 808 17th street N. W.

Washington, D. C.—Dwellings.—William W. Gaines, 2728 Pennsylvania avenue, is now taking estimates on construction of two two-story brick dwellings to be erected on Irving street near 5th. Sanitary plumbing and hot-water heating systems will be installed; cost about \$7000; N. T. Haller Company, architects, Corcoran Building, Pennsylvania avenue and 15th street.

Washington, D. C.—Dwellings.—Mrs. M. E. Vernon has awarded contract to Joseph Mandley, 220 H street N. W., for the construction of two two-story brick dwellings at 501 and 503 Irving street N. W. Steam-heating system will be installed; N. T. Haller Company, architects, Corcoran Building, Pennsylvania avenue and 15th street.

Washington, D. C.—Hall.—The Gallien Fishermen have awarded contract to Wm. Dudley, 477 K street S. W., for general alterations and addition to hall at 320 F street S. W., to cost about \$9000.

Washington, D. C.—Dwelling.—E. E. Jackson has awarded contract to A. R. Taylor, 820 I street N. E., for the construction of brick dwelling at 1803 2d street to cost about \$6000.

Washington, D. C.—Amusement Park.—It is reported that the Ingersoll Company, Pittsburgh, Pa., will expend about \$350,000 in the construction of amusement park at Four-Mile Run, near Washington, its plans including a hippodrome, seating 8000; various amusement buildings, and electric-lighting plant of sufficient capacity to furnish 80,000 16-candle-power lights.

Washington, D. C.—Public-convenience Station.—Sealed proposals will be received at the office of Henry B. F. Macfarland, Henry L. West and John Biddle, commissioners, District of Columbia, until February 21 for the construction of public-convenience station No. 1. Plans and specifications may be obtained from office of the commissioners.

Wickliffe, Ky.—Church.—It is reported that the Methodist congregation will rebuild edifice recently burned at a loss of \$3000. Address The Pastor.

Winona, Miss.—Building.—A. B. Crouch will erect a three-story brick building, 120x100 feet, of ordinary construction, equipped with hot-water heating plant, electric lights, etc., at a cost of \$35,000, and wants to correspond with architects relative to plans, specifications and cost.

RAILROAD CONSTRUCTION.

Railways.

Afton, I. T.—The Missouri, Oklahoma & Gulf Railroad is reported to have secured right of way from Afton for its railway and to begin construction at Afton and build south down the Grand river to Wagoner, I. T. The road is now in operation from Wagoner to Dustin, I. T. H. S. Moore is chief engineer at Muskogee, I. T.

Athens, Ga.—It is reported that the Gainesville Midland Railroad Co. is about ready to begin work on its new freight terminals in the city. E. L. Douglass is general manager at Gainesville, Ga.

Augusta, Ga.—The Augusta & Western Railway Co. has applied for a charter to build a railroad from Augusta, in Richmond county, to Elberton, in Elbert county, Georgia, 70 miles. The incorporators are E. F. Verdery, Fred T. Lockhart, G. H. Nixon, J. P. Armstrong, J. E. Hogan, James U. Jackson, Chas. F. Fargo, T. G. Doughty, Victor J. Dorr and W. E. Andrews.

Baltimore, Md.—The Manufacturers' Record is officially informed that there is nothing in the report that surveys are being made by the Baltimore & Ohio Railroad for a line to extend from Connellsville, Pa., to Cumberland, Md. D. D. Carothers is chief engineer at Baltimore.

Ben Franklin, Texas.—It is said that capitalists of Indian Territory are interested in the construction of an interurban railroad from Ben Franklin to Charleston, in Delta county, about 22 miles. Col. E. T. Pillman of Cooper, Texas, may be able to give information.

Berwick, La.—It is reported that work will begin within 10 months on the proposed railroad which is to connect Berwick with New Iberia via Jeanerette, La., about 40 miles.

Birmingham, Ala.—The Birmingham & Mississippi Southern Railway has applied to the legislature for a charter to build and operate a railway between Baton Rouge, La., and Birmingham, Ala., with headquarters at Hattiesburg, Miss. The promoters are ex-Gov. A. H. Longino, former Secretary of State John J. Coman, A. J. Hackett of Jackson, Miss.; A. O. Gibson of Birmingham, E. F. Ballard of Waynesboro, Miss.; D. C. Dunlap of Chicago, D. E. McInnis, Howard C. Lea, Will A. Aaron, M. Hemphill, T. O. Watkins, R. C. Oliver and Lewis H. Bell of Hattiesburg, Miss.

Bowling Green, Ky.—It is reported that a meeting is to be held looking to a survey for a route for a railroad from Bowling Green to Leitchfield, Ky. Members of the firm of Leber, Cole & Co. of New York city are said to be interested.

Brookhaven, Miss.—Final survey is reported being made for the Mississippi Central's road from Brookhaven to Natchez. M. H. McCabe is superintendent at Hattiesburg, Miss.

Brunswick, Md.—Articles of incorporation have been filed at Annapolis for the Brunswick, Broad Run & Wolfville Railroad & Power Co., which proposes building a steam or electric line from a point near Brunswick in Frederick county to Wolfville via Petersville, Burkettville and Bull Run, about 20 miles. The company will have \$30,000 capital, which may be increased to \$200,000, and the incorporators are C. C. F. Bent, William Schnauffer, Dr. Levin West, Outerbridge Horsey and Lewis H. Bowles.

Burlington, W. Va.—The Pennsylvania Railroad is reported to have purchased practically the entire town of Burlington for the purpose of securing rights of way for double track and possibly for terminal facilities. W. H. Brown is chief engineer at Philadelphia, Pa.

Central City, Ky.—Contract is reported let for construction of 13 miles of the road extending from Central City toward Madisonville, and it is said work will begin immediately.

Charleston, S. C.—The name of the Carolina Northern Railroad, which extends from Lumberton, N. C., to Marion, S. C., has been sold to bondholders and the name changed to the Charleston & Raleigh Railroad. It is rumored that there is a possibility of the road being extended in each direction in order to reach from Charleston, S. C., to Raleigh, N. C.

Chattanooga, Tenn.—The Chattanooga, Anderson & Atlantic Railway Co. has been chartered under the laws of Georgia and South Carolina to build a double-track steam road from Chattanooga, Tenn., to Charleston, S. C., via Clayton, Ga., and Westminster and Anderson, S. C., about 245 miles. The company has offices in Anderson and Chicago, and the officers are Albert R. Morton of Chicago, president; Capt. P. K. McCully, Sr., treasurer; John E. Breazeale, secretary; Major B. F. Whitner, general counsel, all of Anderson, and Lewis R. Emery of Chicago, assistant treasurer and assistant secretary.

Clarksville, Tenn.—The Illinois Central Railroad Co. is reported to have purchased property at Clarksville for yards and depot. A. S. Baldwin is chief engineer at Chicago, Ill.

Cotton Valley, La.—The Dorchate Valley Railroad Co. has been organized with \$50,000 capital to build from a point on the Louisiana & Arkansas Railroad at or near Cotton Valley to Gleason. The directors are E. E. Porter, president; J. K. Wadley, secretary and treasurer, and C. D. Towery.

Cynthiana, Ky.—Survey will soon begin, it is reported, on the proposed interurban railway from Cynthiana to Alexandria, Ky., and thence to Newport; also for another road from Flemingsburg through Mt. Olivet to Brooksville, with Maysville as the terminus. Col. Albert Berry of Newport is said to be the principal promoter.

Cumberland, Md.—Work on the Kessler tunnel on the Western Maryland Railroad is reported finished and track is to be laid immediately. Trains are expected to be running through the tunnel in a few days. J. Q. Barlow is chief engineer at Cumberland.

Dardanelle, Ark.—The Central Railway Co. of Arkansas has been granted a charter to build a line from a point near Dardanelle to the southern boundary of Yell county, about 130 miles, with a branch from near Ola to Waldron. The principal incorporators are W. R. Abbott of Fort Smith and J. W. Meloud, general attorney for the Midland Valley Railroad.

Emory Gap, Tenn.—It is reported that the Southern Railway will remove its terminal facilities from Oakdale to Emory Gap, Tenn. W. H. Wells is engineer of construction at Washington, D. C.

Fayetteville, W. Va.—An election is to be held February 27 to decide the question of subscribing \$6000 in aid of the Fayette & Fayetteville Railroad. R. L. Carter is mayor.

Fort Smith, Ark.—It is reported that the Midland Valley Railroad will soon begin construction of a line from Fort Smith to Hot Springs, Ark., about 100 miles. F. A. Molitor is chief engineer at St. Louis, Mo.

Gadsden, Ala.—Mr. J. M. Dewberry writes the Manufacturers' Record confirming the report that he and associates are organizing the Tidewater Development Co. for the purpose of building an electric railway from Gadsden through the Birmingham district to Tuscaloosa, Ala., about 100 miles.

Greenwood, S. C.—Concerning the report that the Seaboard Air Line is interested in a plan to build a railroad from Greenwood to Columbia via Epworth and Saluda C. H., about 65 miles, J. M. Barr, president and general manager, at Portsmouth, Va., writes the Manufacturers' Record denying the rumor.

Hamilton Springs, Tenn.—Contract for construction of the yards at Hamilton Springs, on the Knoxville, Cumberland Gap & Louisville branch (Southern Railway), is reported let to I. Hornbeck of Bristol, Tenn. The contract includes the construction of from three to five miles of track between Arthur and Cumberland Gap at Hamilton Springs.

Hamilton, Texas.—Citizens of Hamilton county are reported to be organizing a company to build a railroad into Hamilton. The plan is to construct a railroad from Thuber via Stephenville and Hamilton to Belton or Temple. Among those interested are Dr. George F. Perry, John L. Spurlin, J. T. James, J. L. Lewis and H. E. Chesley.

Hampton, Va.—The Hampton & Yorktown Railway Co. is reported to have asked the supervisors of Elizabeth City county for permission to use certain roads in the county for a railway to be constructed from Hampton to Yorktown.

Hillsboro, Texas.—Mr. D. Alexander Kelly of Waco is reported as saying that he contemplates building a standard-gauge railroad to run from Hillsboro to either Temple or Belton via Waco. The Commercial Club is said to have this under consideration.

Houston, Texas.—The Houston-Galveston Interurban Electric Co., which proposes building an electric railway between the points named, has been granted a franchise by the city council requesting the use of

certain streets in Houston. J. O. Ross is president.

Jackson, Tenn.—Messrs. H. M. Byllesby & Co., engineers, New York Life Building, Chicago, Ill., write the Manufacturers' Record confirming the report that a party of Chicago capitalists had obtained an option on the Jackson Railway, Light & Power Co. of Jackson, Tenn., and adding that the property will be entirely rebuilt.

Jacksonville, Fla.—The Seaboard Air Line will begin work within 30 days, it is reported, on its proposed improvements. J. M. Barr is president and general manager.

Johnson's Stand, Tenn.—According to press reports, work is to begin immediately on the Ohio River & Gulf Railroad, the new company which proposes building from Johnson's Stand, in Cumberland county, to Jamestown, in Fentress county, about 25 miles. The road will develop coal and timber land between the points mentioned and owned by the Tennessee Land & Coal Co. J. E. Jones of Monterey is president of the Ohio River & Gulf Railroad, and the directors are L. T. Smith, Jamestown; William Cooper, Maryland (Johnson's Stand); S. E. Slus, Chicago, and S. R. Williams, Nashville.

Jonesboro, Ala.—A franchise is pending in the Bessemer city council authorizing the Birmingham Railway, Light & Power Co. to build a line from Birmingham to Jonesboro, via Bessemer, about 12 miles.

Jonesboro, La.—The Shreveport, Jonesboro & Natchez Railway Co., which proposes building a road from Jonesboro to Shreveport, La., via Natchez, Miss., about 250 miles, has been granted a charter. J. S. Cargill is general manager at Jonesboro.

Kansas City, Mo.—The Kansas City, Tulsa, Texas & Gulf Railway Co., with \$10,000,000 capital, has been chartered to build a railroad from Kansas City to Matagorda Bay, on the Gulf of Mexico, about 980 miles. The incorporators are L. Howard Lee, W. H. Swent, Warren K. Snyder, J. W. Helt, M. S. Lee and E. T. Yikes of Oklahoma City and D. B. Merry of Roswell, N. M.

Kansas City, Mo.—Vice-President H. U. Mudge of the Rock Island system is reported as saying that the company will expend \$9,000,000 in improvements.

Lauderdale, Miss.—The Lauderdale & Northwestern Railway has been incorporated to build a railroad from Lauderdale to Kemper Springs, about eight miles. The incorporators are J. E. Tartt, George B. Neville, R. E. Wilborn and others.

Little Rock, Ark.—It is reported that a new railway company is to be chartered to build a line 130 miles long through the western part of Arkansas. Henry Armistead and capitalists of Fort Smith, Ark., are said to be interested.

Madisonville, Ky.—It is reported that right of way is practically secured for the Madisonville, Hartford & Eastern Railroad, which proposes building a line 60 miles long from Madisonville to Hartford, connection being made at Irvington with the Louisville, Henderson & St. Louis Railway.

Marion, Ark.—The Memphis & New Orleans Railroad Co. (a Frisco branch), which proposes building from Marion, in Crittenden county, south to the State line in Chicot county, about 179 miles, has been granted a charter. The incorporators are L. F. Parker, C. R. Gray and W. B. Drake of St. Louis, Mo., and others.

McKinney, Texas.—Mr. M. J. Healy, general manager of the Texas, New Mexico & Pacific Railway Co., writes the Manufacturers' Record that the company has let contract to the Rock Island Construction Co. of Chicago for 375 miles of line from McKinney to the New Mexico line, construction to begin early this month, but wants to hear from contractors to take a subcontract or part of the line. The company will build about 560 miles in Texas and New Mexico. The other officers of the company are Jesse Shafr, president; J. P. Crouch, vice-president; J. L. White, secretary and treasurer; J. L. Doggett, general attorney.

Mexia, Texas.—Mr. M. Sweeney, vice-president and general manager of the Trinity & Brazos Valley Railway, is reported as saying that grading has been completed and eight miles of track laid on the extension of its road from Mexia to Houston. Mr. Sweeney's office is at Cleburne, Texas.

Mobile, Ala.—It is reported that Harry Pilans, who was recently granted a franchise to build a street railway in Mobile, will build an interurban line to connect with New Orleans, the line going via Bay St. Louis, Pass Christian, Biloxi, Scranton, Pascagoula, Moss Point and Coden, about 150 miles.

Mobile, Ala.—The West Shore Traction Co. is reported being organized by New York and Mobile capitalists to build a railway from Virginia street, Mobile, to Alabama

Port, 23 miles south on the west coast of Mobile bay. Thomas F. Costello and Henry M. Sossaman of Mobile are interested.

Montvale, Va.—The Norfolk & Western Railway has authorized the completion of the double track from Montvale to Lowry; also the building of a new single track from Forest to Concord around Lynchburg. C. S. Churchill is chief engineer at Roanoke. The contractors are Quinn & Harmon, Philadelphia; Moran-Phelan Construction Co., Pittsburgh; Vaughan Construction Co., Roanoke; J. F. McCabe & Co., Baltimore, and E. G. Nave Bros. Company, Portsmouth, Ohio.

Morehead, Ky.—Mr. E. B. Carr and a Mr. Clark, both of Philadelphia, Pa., will, it is reported, push the construction on the Morehead & West Liberty Railroad to completion.

Morehead, Ky.—The Clearfield Lumber Co. of Clearfield, Pa., is reported to be planning a railroad from Clearfield, Pa., to timber land in Morgan county.

Morgantown, W. Va.—The Dunkard Valley Railroad Co., which proposes operating a trolley line from Morgantown to Mannington, W. Va., about 40 miles, has been granted a franchise to use certain streets in Morgantown. This, it is said, insures the immediate construction of the road.

New Orleans, La.—Mr. A. J. Davidson, president of the St. Louis & San Francisco Railroad Co. at St. Louis, Mo., informs the Manufacturers' Record that there is nothing in the report that his company has purchased the New Orleans, Fort Jackson & Grand Isle Railroad.

New Orleans, La.—The Dutuville Railroad & Planting Co. has filed a charter with \$400,000 capital stock and Emile Pierre Dutu, president; Flemin Durban, vice-president; Henry J. Camors, secretary and treasurer.

Newport News, Va.—W. J. Payne, head of the syndicate which controls all the street-railway lines on the Virginia peninsula, has applied to the city council for authority to consolidate the lines of the Newport News & Old Point Railway, the Hampton Roads Traction and the Citizens' Railway, Light & Power companies. It is said if the authority is granted the lines will be improved.

Oklahoma City, O. T.—President W. S. McCaul of the Colorado, Oklahoma & New Orleans Railroad is reported as saying that nearly all the right of way between Oklahoma City and Woodward has been secured and that construction will begin within 60 days.

Opelousas, La.—Regarding the report that the Colorado & Southern Railway was preparing to begin construction on a line from Opelousas to Baton Rouge, also between Crowley and Eunice, Mr. H. W. Cowan, chief engineer of the company at Denver, Col., informs the Manufacturers' Record that the company has nothing to do with the building of such a line.

Opelousas, La.—The mayor has approved the ordinances allowing the Colorado Southern, New Orleans & Pacific Railway the use of two important streets in the city, and surveys are now reported to be working on the line.

Phillip, Miss.—Mr. Glá. Montjoy, Sr., is reported to have the contract for constructing several miles of the proposed branch of the Yazoo & Mississippi Valley Railroad (Illinois Central system) from Phillip to Sardis, and work is expected to begin within a few days. Supplies for the road are now being purchased. A. S. Baldwin is chief engineer at Chicago.

Pomona, N. C.—Mr. John A. Dodson, who is in charge of the Southern Railway's double-tracking operations, is reported as saying that grading for the double track between Pomona and High Point has been finished and tracklaying would soon begin; that grading was going on between Linwood and Spencer, and that bids for grading between High Point and Linwood would soon be opened. W. H. Wells is engineer of construction at Washington, D. C.

Providence, Ky.—The Kentucky Valley Railroad, which is being built from Providence, Ky., to Wheatcroft, Ky., is reported to be nearing completion. Irving H. Wheatcroft is president of the company.

Rayne, La.—Work has begun on the Rayne division of the Opelousas, Gulf & Northeastern Railroad. C. C. Genung is superintendent of construction, with office at Opelousas, La. Thomas H. Lewis is president.

Rogersville, Tenn.—Engineers are reported to have finished half the survey for the Holston River Railway's proposed line, which is to extend from Rogersville to Moccasin Gap, near Bristol, Tenn. James B. Wright is president of the company; office at Knoxville, Tenn.

Shreveport, La.—The Manufacturers' Record is informed that arrangements are being made by the Shreveport Progressive League

to submit to the taxpaying voters a proposition to give a bonus of \$75,000 in aid of the Shreveport Northeastern Railroad Co., which proposes building a road from Shreveport to Homer, La. Work is now in progress on the road. A. K. Clingman is president of the railroad company.

Statesboro, Ga.—The Statesboro & Midville Railway Co. has applied for a charter to build from Statesboro to Midville and thence to Louisville, about 60 miles. The incorporators are G. Noble Jones, Charlton G. Osburn, C. G. Anderson, Jr., James A. Doyle, W. H. Stillwell, George S. Cargill, W. F. Constantine, Edwin A. Cohen, John R. Cowan and Ralph Meldrim.

Waco, Texas.—The Texas Central Railroad has filed an amendment to its charter providing for the construction of branches from Waco to Stamford, Chairette to Straw and from Daleon to Nolain, a total of 163 miles. E. H. R. Green is president and general manager at Terrell, Texas.

Warm Springs, Ga.—Surveys are reported being made for the Atlantic & Birmingham Railway's branch from Warm Springs to Atlanta, Ga., about 65 miles. Geo. Dole Wadley is vice-president and general manager at Waycross, Ga.

Street Railways.

Asheville, N. C.—Plans are reported being made to build a street railway to connect West Asheville with the center of the city.

Baltimore, Md.—The ordinances granting the Washington, Baltimore & Annapolis Electric Railway and the United Railways & Electric Co. the joint use of German street have been passed.

Bluefield, W. Va.—The Bluestone Traction Co. has filed application for a charter to build and operate an electric railway in the city. John Walters is president.

Fort Worth, Texas.—Citizens of South Side are reported to be endeavoring to secure an extension of the Fort Worth & Rosen Heights Street Railway, of which Sam Rosen is president.

Memphis, Tenn.—The Memphis Street Railway has been granted another franchise permitting it to extend its line out the New Raleigh road.

Meridian, Miss.—The Meridian Light & Railway Co. will, it is reported, make extensive improvements to its line.

Mobile, Ala.—A company is reported being organized by Charles Cunningham, George Leatherbury, Charles Stanton of Mobile, A. Vizard of New Orleans and others to build an electric street-car line the entire length of Bay Shore Shellroad, about nine miles, to connect with one of the electric systems of the city. Construction is to begin as soon as rights of way have been secured.

Paintsville, Ky.—Mr. E. E. Maggard of Morehead, Ky., is reported to be seeking a franchise for a street railway in Paintsville.

Washington, D. C.—It is stated that the Capitol Traction Co. will build several extensions to its line.

MACHINERY, PROPOSALS AND SUPPLIES WANTED.

Manufacturers and others in need of machinery of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery needed we will make their wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. The Manufacturers' Record has received during the week the following particulars as to machinery that is wanted:

Agricultural Implements.—Peters Implement Co., R. B. Peters, president, Lewis Building, 413 Main street, Tarboro, N. C., wants cuts, prices, etc., on farm implements, hardware, etc.

Bagging Machinery.—J. P. Dellinger, Cherryville, N. C., wants machinery for the manufacture of new jute bagging for cotton and for reworking the old; also estimates on cost of equipping small plant.

Bed-spring Machinery.—"H," care of M. T. Hill, Sumter, S. C., wants catalogues and information as to cost of machinery for making bed springs.

Boiler.—Cullman Fruit and Produce Association, L. A. Fealy, manager, Cullman, Ala., wants a 70-horse-power boiler.

Boiler.—V. H. Sibille, Sunset, La., is in the market for a 50-horse-power portable boiler.

Boiler.—T. S. Clark & Co., Davidson, Ky., want a 60 to 80-horse-power stationary boiler. (See "Engine and Boiler.")

Boiler.—Columbus Showcase Co., 11 West 14th street, Columbus, Ga., wants a second-hand boiler.

Boiler.—Charles B. Goforth, Lock Box 113, Rutherfordton, N. C., wants prices on boilers.

Boilers.—See "Engines and Boilers."

Boilers.—Interstate Machinery & Supply Co., Wilmington, N. C., wants to correspond with manufacturers relative to securing agency.

Bottling Equipment.—Casper-Thrash Company, Inc., Roanoke, Va., is in the market for bottling and filtering machinery.

Bridge.—Sallsbury Marine Railway, Otis S. Lloyd, proprietor, Sallsbury, Md., wants information regarding cost and construction of a pivot draw to have about 60-foot opening on each side and be about 12 feet wide; also wants to correspond with manufacturers of steel piling.

Brick Machinery.—McAlha Brick & Construction Co., Sumney Alexander, secretary-treasurer, Lincolnton, N. C., wants to purchase brick machinery.

Bridge Construction.—Board of Public Works, A. L. Thomas, chairman, Chattanooga, Tenn., will open bids February 13 for the erection of 11th-street bridge, mentioned in issue of December 14.

Building Materials.—Porter-Wrigley Company, 1415 Empire Building, Atlanta, Ga., wants addresses of manufacturers of building and sheathing paper.

Building Materials.—Southern States Reinforced Concrete Co., Atlanta, Ga., wants prices on crushed stone, sand and Portland cement in large quantities.

Building Materials.—F. J. Cooledge & Bro., Forsyth street, Atlanta, Ga., want prices on building material for six two-story store buildings.

Building Material.—L. B. Whatley, 222 New Atlantic Building, Norfolk, Va., is in the market for material for the construction of an apartment-house.

Cannery Equipment.—Cullman Fruit and Produce Association, L. A. Fealy, manager, Cullman, Ala., is in the market for machinery and equipment for canning factory of 60,000 cans daily; also prices on capping machine, second-hand, if in good condition (Hawkins).

Cement.—See "Building Materials."

Cement.—Sealed proposals will be received until February 28 at the office of John Stephen Sewell, captain, engineers, constructing officer for United States Soldiers' Home, Washington Barracks, D. C., for furnishing 12,000 barrels, more or less, of Portland cement.

Concrete Mixer.—Columbus Showcase Co., 11 West 14th street, Columbus, Ga., wants a second-hand concrete mixer.

Concrete Mixer.—S. W. Shoop, care Berkeley Hotel, Martinsburg, W. Va., wants a good second-hand concrete mixer mounted on wheels or skids, steam operated.

Cotton-rope Machinery.—Pope & Sawyer, Marshall, Texas, want addresses of dealers in machinery for making cotton rope and twine.

Crusher.—S. W. Shoop, care Berkeley Hotel, Martinsburg, W. Va., wants a second-hand portable stone crusher mounted on wheels.

Distilling Apparatus.—Casper-Thrash Company, Inc., Roanoke, Va., is in the market for distilling apparatus.

Drinking Fountain.—Town of Oxford, N. C., wants bids on drinking fountain for man, beast and dogs. Send descriptions and illustrations; J. P. Stedman, for committee on fountain, board of city commissioners.

Dredging Machinery.—M. H. Dawson, Sallsbury, Md., is in the market for second-hand suction dredging machinery.

Electric Fixtures.—A. S. Weinbaum, 600 McGavock street, Nashville, Tenn., wants prices on electric and gas fixtures combined suitable for apartment-houses and flats.

Electrical Supplies, etc.—Sealed proposals will be received until March 19 for dry colors, rubber goods, engravers' supplies, textiles; until March 20 for hardware, oils, dextrine, grocers' sundries; until April 9 for paper, binders' supplies, plumbers' supplies, chemicals; until April 10 for electrical supplies, printers' ink, rollers, paper boxes, lumber, for Bureau of Engraving and Printing, Treasury Department, Washington, D. C. Specifications and proposal forms can be obtained from Wm. M. Meredith, director of bureau.

Electric-light Plant.—See "Water-works, etc."

Elevator.—Columbus Showcase Co., 11 West

14th street, Columbus, Ga., wants a second-hand elevator.

Engine and Boiler.—T. S. Clark & Co., Davidson, Ky., want a 40 to 60-horse-power stationary engine and 60 to 80-horse-power stationary boiler.

Engines.—X. G. W., care Manufacturers' Record, Baltimore, Md., is in the market for four marine gas engines, four cycles, 40 horse-power each, suitable to be used with twin propellers. Give particulars and prices.

Engines and Boilers.—Casper-Thrash Company, Inc., Roanoke, Va., wants engines and boilers.

Engines and Boilers.—Tumlin Gin Co., Cave Springs, Ga., wants prices on engines and boilers; also gasoline engine for power purposes.

Factory Supplies.—Luster Soap Co. is in the market for cartons, oils, perfumes, labels, calendars and all sorts of advertising signs and novelties. Address J. D. Bacon, business manager, Paducah, Ky.

Filtering Machinery.—See "Bottling Equipment."

Foundries.—J. B. Nell, Filbert, S. C., wants addresses of manufacturers of malleable-iron castings, also wrought steel.

Gas Fixtures.—See "Electric Fixtures."

Gas Plant.—J. H. Guitar, Stamford, Texas, is in the market for machinery suitable for the manufacture of a cheap illuminating gas for a town of about 6000 inhabitants.

Ginnery Equipment.—Tumlin Gin Co., Cave Springs, Ga., wants complete equipment for cotton gin.

Hoisting Engine.—Columbus Showcase Co., 11 West 14th street, Columbus, Ga., wants a second-hand hoisting engine.

Iron Screws.—Frank Wright, Cave Springs, Ga., wants prices on iron screws for attaching legs to knock-down tables.

Knitting Machinery.—J. H. Reynolds, Bristol, Tenn., wants to correspond with manufacturers of knitting machinery for underwear and hosiery.

Knitting Machinery.—J. L. Cromer, Rhodhiss, N. C., wants information and prices on machinery and equipment for hosiery mill.

Knitting Machinery.—M. C. Winston, Selma, N. C., wants equipment for \$25,000 knitting-mill enterprise.

Lath Mill.—Marks & Green, Springfield, Ky., want to buy a new or second-hand gang lath mill.

Manufacturers.—Geo. C. Thompson, architect, Room 1230, Candler Building, Atlanta, Ga., wants catalogues and price-lists from manufacturers.

Manufacturers.—Victor Maru, Bluefields, Nicaragua, wants catalogues from manufacturers of pianos, steel ceilings, wagons and carriages, ladies' dresses, soap and soap stock, furniture, etc., with a view to securing agency.

Mattress-factory Supplies.—J. W. Hollingsworth, manager Tar River Mattress Co., Louisville, N. C., is in the market for straw, shucks and everything that goes into the manufacture of bedding.

Mining Machinery (Electric).—Monarch Coal & Coke Co., C. D. Caldwell, president, Bristol, Va.-Tenn., wants prices on electric coal-cutting plant.

Mining Machinery.—Columbus Concrete Supply Co., Ernest L. Hill, president, Columbus, Ga., wants bids on machinery for washing, drying and screening silica sand.

Nickel-plating Machinery.—Thoele-Phillips Manufacturing Co., Commerce and Spring streets, Florence, Ala., wants a nickel-plating outfit for stove trimmings.

Paving.—Bids will be received until February 15 at the office of J. M. G. Carrera, city clerk, St. Augustine, Fla., for paving Charlotte street with vitrified brick according to specifications, which may be seen at clerk's office.

Piping.—Casper-Thrash Company, Inc., Roanoke, Va., is in the market for steam pipes.

Piping.—See "Water-works Equipment."

Piping.—Sealed proposals will be received until February 28 at the office of Elliott Woods, superintendent of United States Capitol Building and Grounds, Department of Interior, Washington, D. C., for furnishing cast-iron soil and drain pipe and fittings for plumbing work for the office building for United States Senate.

Pulverizing Machinery.—Nashville Carbon & Oil Co., Seventeenth avenue, Nashville, Tenn., wants prices on pulverizing machinery that will guarantee fineness 200x200 mesh.

Pumping Plant.—H. L. Woodward, 237 West 14th street, New York, N. Y., wants to purchase a steam pump and boiler capable of throwing a two-inch or three-inch stream of water with pressure equal to 200-foot

head; want machinery that can be sectionalized, no piece weighing over 200 pounds, as the machinery must be taken to mines on the backs of mules.

Pumping Plant.—Bids addressed to Chester B. Davis, M. Am. Soc. C. E., engineer, Harlingen, Texas, will be received by the American Rio Grande Land & Irrigation Co. until March 1 for the complete installation of high-grade machinery for a steam-driven electric-transmission pumping plant for irrigation service near Harlingen; also proposals direct from manufacturers and others for the various parts thereof; plant to be of 1000 horse-power capacity. Specifications on file at the office of T. W. Carter, president, 114 North 4th street, St. Louis, Mo., and copies will be supplied on receipt of acceptable bank exchange for \$15 by the engineer. A deposit of 5 per cent. of the amount of each proposal, made payable to the St. Louis Union Trust Co., trustee, St. Louis, Mo., in the shape of cashier's check or other acceptable deposit, must accompany each bid. Usual rights reserved.

Pumps.—Casper-Thrash Company, Inc., Roanoke, Va., is in the market for pumps.

Railway Equipment.—J. L. Lovvorn, Bowdon, Ga., is in the market for about 1000 tons good second-hand steel rails weighing 50 to 60 pounds; also a medium-weight second-hand locomotive and a few cars.

Railway Equipment.—Monarch Coal & Coke Co., C. D. Caldwell, president, Bristol, Va., Tenn., wants prices on new and relaying rails.

Railway Equipment.—Acme Lumber Co., Marlboro, S. C., is in the market for three to six miles 30-pound steel rails, f. o. b. Atlantic Coast Line Railroad.

Railway Equipment.—Jos. E. Bowen, 902 Bank of Commerce Building, Norfolk, Va., is in the market for a 14-inch standard-gauge mogul locomotive for prompt shipment.

Road Machinery.—City of Uniontown, Ala., W. J. Valden, mayor, wants prices on road-building machinery.

Saw-mill.—J. M. Boutwell, Alabama City, Ala., wants addresses of manufacturers of drag saws for sawing down trees and cutting them into four-foot lengths; to be operated by gasoline engine.

Saw-mill.—Beaumont Rice & Canal Co., E. K. Fallor, secretary and general manager, Box 415, Beaumont, Texas, will probably want to purchase a second-hand portable saw-mill next fall.

Sewerage System.—Bids will be received until February 15 at the office of John D. Kelley, city secretary, Galveston, Texas, for the construction of a vitrified-pipe sewer in alley between Avenues J and K from 10th to 13th streets and on 13th street south to Avenue M, together with manholes and appurtenances thereto, in accordance with plans and specifications on file in the office of C. G. Wells, city engineer, and which will be furnished on application. Each proposal must be submitted in duplicate and accompanied by a certified check in the sum of 10 per cent. of amount of bid, payable to the city treasurer. Usual rights reserved; H. C. Lange, commissioner of water-works.

Sewerage System.—Board of Public Works, Gainesville, Fla., will open bids March 7 for the construction of sanitary sewer system and for furnishing material for same. Work will embrace approximately 12 miles of pipe sewers from 6 to 15 inches in diameter. Certified check for \$1000 or a satisfactory guaranteed bidders' bond must accompany each bid. Plans and specifications will be on file and may be seen at the office of Wm. W. Lyon, engineer, and copies of specifications and forms, etc., obtained from W. W. Hampton, secretary Board of Public Works. Usual rights reserved.

Sewerage System.—Mayor and Board of Commissioners of the city of Lexington, N. C., will open bids February 22 for the construction of a sewerage system and furnishing materials for same; work to embrace approximately five and one-half miles of pipe sewers from 8 inches to 15 inches. Plans and specifications on file and may be seen at office of John H. Moyer, mayor, and copies of specifications, forms, etc., obtained from J. L. Ludlow, Winston, N. C., engineer. Usual rights reserved; J. L. Peacock, clerk. Bids were previously asked to be opened January 25.

Sewerage System.—Thos. A. Combs, mayor, Lexington, Ky., will open bids February 15 for the construction of an eight-inch sanitary sewer with connections to the curb line, manholes, flush tanks, etc., on Campbell Place in accordance with the Waring plans and specifications on file in the office of city engineer. The contractor for this work is to look exclusively to the abutting property-owners for the payment of the contract price. Usual rights reserved.

Steel Piling.—See "Bridge."

Telephone Equipment.—Bryson City Telephone Co., Bryson City, N. C., is in the market for 75 telephones, wire, apparatus and tools.

Water-works Equipment.—The council of the city of Buena Vista, Ga., is in the market for a supply of cast-iron water pipes and hydrants.

Water-works, etc.—City of Cochran, Ga., has postponed the date for opening bids for the construction of water-works and electric-light plant (mentioned in issue of December 25) from February 6 to February 20. For plans and specifications address W. B. Denham, city clerk; Arthur Pew, Atlanta, Ga., engineer.

Whistletrees.—J. R. Mercer, Dawson, Ga., is in the market for 15 sets of four-horse single and double trees for use on plantation.

Wood-distilling Plant.—J. B. Millner, Morganton, N. C., wants addresses of manufacturers of wood-distilling plants.

Woodworking Machinery.—Prof. F. E. Daniels, St. John's College, Annapolis, Md., wants to purchase a small second-hand shaper or planer.

Woodworking Machinery.—See "Saw-mill."

Woodworking Machinery.—J. N. Payne & Son, Morganton, N. C., want to buy a second-hand four-sided six-inch molder.

Woodworking Machinery.—See "Lath Mill."

Woodworking Machinery.—J. F. Gaffney, care Cleveland Sash & Door Co., Shelby, N. C., wants prices on machinery and equipment for plant to manufacture sash, doors, blinds, moldings, etc.

MEXICO.

Car Barns.—Juan W. Shepard & Co., City of Mexico, has been awarded contract for the construction of car barn, 75x180 feet, for the Mexican Railway at Buena Vista.

Coal-mining.—The Compania Carbonifera de Sabinas, S. A., promoted by Ernesto Madroo of Monterey, Nuevo Leon, has been organized for the exploitation of coal fields in vicinity of San Juan Sabinas. A large coke-oven plant will be erected; L. M. Lamar, general manager.

Mining.—The Boca Ancha Mining Co. has been organized to operate Boca Ancha mine in Parnaso, district of Jalisco. A 30-ton reduction plant will be erected near the mine. Charles E. Lee of Chicago is president of the company; C. C. Bruckner, Chicago and Guadalajara, vice-president; George E. Zimmerman, Chicago, secretary, and Dr. George E. Purnell, Guadalajara, general manager; offices at 34 East Monroe street, Chicago, Ill.

Railways.

Electric Railway.—The Compania Industrial de Guadalajara, the French light and power company of Guadalajara, Mexico, will, it is reported, build an electric railway under a concession secured from the State government several years ago. The line, when built, will afford connection between the cotton factories of the Compania Industrial de Guadalajara north of the city and the Mexican Central terminals. Several miles of track will be built within the city limits and a suburban circuit will be established. The road will cost about \$500,000. Plans have been approved and work is to begin within 30 days.

Steam Railroad.—Engineers are reported to be locating an entrance for the San Gregoria Railroad into the city of Guanajuato, and construction of the line is to begin soon. The road, which now extends from Marfil, on the Mexican Central, to the San Gregoria mines, will enter Guanajuato from Marfil, and that portion will connect with the National Railroad.

Steam Railroad.—Local engineers of the Mexican Central Railway will, it is reported, soon begin survey for a short line of the Central between Acapulco and Tampico.

Street Railways.—It is reported that arrangements have been completed for the immediate construction of the San Marcos Valley Interurban Railway, which is to extend from San Marcos to Luling. R. J. Jennings is president, and Judge B. G. Neighbors, vice-president and secretary of the company.

Complete Lumber Plant Offered.

A complete plant for the manufacture of lumber, shingles, cooperage and veneer packages is offered for sale. It is located at Wilmington, N. C., where a plentiful supply of wood is obtainable and the shipping facilities are complete by rail or water. The mill has a daily capacity of 15,000 feet. Colled hoops, slack and tight barrels, vegetable baskets, etc., are among the product. Full particulars regarding the enterprise can be obtained by addressing A. H. Slocomb, Fayetteville, N. C., or C. L. Taylor, Wilmington, N. C.

SOUTHERN CITY INDUSTRIAL NOTES

[Special Correspondence Manufacturers' Record.]

Atlanta, Ga., February 5.

One of the interesting and progressive enterprises of this city is the Electric Manufacturing & Equipment Co., which is now doubling its plant both with regard to dimensions and output capacity. This company is the patentee of the "Wotton Loud-Ringing Extension Gongs" and sole proprietor of same. These bells have struck a field in the line of telephone equipment hitherto untouched, yet which is of great service for factory and mill purposes generally, where the ordinary noise and vibratory machinery sounds deaden or drown those of the ordinary telephone ring. The company is literally crowded with orders for these gongs, not only from the cotton mills and factories of the South, but also from California, Utah, Illinois, New York and other States North and West. For cotton mills, cotton-oil mills, foundries, machine shops, boiler works and other manufacturing plants where the regular operations make loud noise unavoidable the "Wotton" is in great demand. It is the purpose of the company to add another manufacturing line, that of electric switchboards, for which there is a steady and growing demand in the South. This department will be in operation within 90 days.

The management of this prosperous business is under F. M. Saxton, who was for years supply manager of the General Electric Co., and has been for years identified with electrical interests in the South.

The company is capitalized at \$100,000. Its present plant includes lumber yards, dry-kilns, complete woodworking mills, foundry and plating shops, metal-working department, etc. The duplication of this plant indicates the progress the South is making in the demand for things electrical, not to speak of the surprising developments in the use of the telephone.

Among the telephone exchanges recently completely equipped by the Electric Manufacturing & Equipment Co. are the following: Bainbridge, Boston, Abbeville, all of Georgia; Greentown, S. C.; Dothan, Ala., and Monticello, Fla.

George B. Hinman, the well-known builder and contractor of Atlanta, has just completed the construction of the seven-story building and offices for the Fulton Bag & Cotton Mills of Atlanta, the expenditure representing \$62,000. Mr. Hinman includes reinforcing concrete work in his field. A number of the South's largest mills have been built by Mr. Hinman, whose reputation in his specialty is of the highest standard. The following are a few of the number of industrial plants constructed by Mr. Hinman: Dallas Mills, Huntsville, Ala.; Lowe Mills, Huntsville, Ala.; Rowe Mills, Huntsville, Ala.; Southern Bell Telephone Exchange, Atlanta; Atlanta Athletic Clubhouse, Atlanta; Coosa Mill No. 2, Piedmont, Ala.; Dan River Cotton Mills, Danville, Va., and City Pumping Station, Danville, Va.

The Snow Steam Pump Works of Buffalo, N. Y., through Manager A. W. Jones of the Southern office, Atlanta, has closed contract with the Georgia Railway & Electric Co. of Atlanta for a 3000-horse-power gas engine. This is the largest engine of this type that I know of installed in the South. It will be used to drive an alternating generator to run parallel with present electrical machinery. With the extremely close regulation necessary in the matter of speed under varying loads this is a fine mechanical problem which will be, no doubt, successfully solved by the Snow Steam Pump Works Co.

Mr. W. J. Nally, Atlanta, Ga., mechanical engineer, has closed a \$4000 contract with

Manager Smith of the American Can Co.'s Atlanta branch works for a steam plant and generators for electric illumination. The machinery has been purchased by Mr. Nally.

Mr. James O. Spear, Jr., of the Southern States Electric Co. of Atlanta has sent me the following statement regarding the electric-light plant at Dublin, Ga.:

"The initial plant was installed about 1895, and consisted of a Fort Wayne alternator and 35-light direct-connected Fort Wayne arc generator. On account of the growth of the town this first alternator was replaced in 1898 with a 100-kilowatt single-phase Fort Wayne machine, which, though overloaded, was only taken out of service during the early part of December, when the new equipment was installed.

"A year ago the city realized that the steady increase in the demand for lights had already gone beyond the capacity of the plant and that the number of street lamps was insufficient to cover the territory then embraced within the city limits. An appropriation was therefore made to extend the plant.

"On account of other work on hand orders were not placed until the last of July, at which time contract was made with the Fort Wayne (Ind.) Electric Works for an entirely new electrical equipment, including a 200-kilowatt three-phase revolving-field-type belted alternator, a new switchboard, a 70-light series A. C. arc-lamp equipment and new multiple transformers for the lines.

"This change in the equipment was effected early in December, when 50 enclosed street lamps were put in service. This number will be increased from time to time as the lines are extended until the full equipment is in service."

The Western Electrical Co.'s new plant in Atlanta, Ga., general manager, O. D. Street, will be in operation by March 1. The main structural work is completed and several of the machine-shop departments are already in operation, with a good volume of business already in hand to test full capacity of new plant when in operation.

One of the rising young architects of Atlanta is Edward E. Dougherty, who has just opened an office at 313 Candler Building. He is a native of Atlanta who returned home about a year ago and has since been designing in the office of a local architect, and now intends to act entirely for himself. Mr. Dougherty has had an exceptional training to perfect him in his chosen profession, having begun the study of architecture at Cornell in 1895 and taking his degree in 1898. Then he left for Paris, and was admitted in 1899 to the well-known Ecoles des Beaux Arts or French National School of Fire Arts, from which institution he graduated in February, 1905. After a careful consideration of the various fields of endeavor presenting themselves to the architect, Mr. Dougherty decided that the profession was becoming crowded in the big cities of this country, and chose Atlanta for the scene of his efforts because of his confidence in the future growth of the city and the surrounding territory. It is stated that Dougherty is the only architect in the South holding a diploma from the famous French institution referred to above, and that in the entire country there are not more than 25 men who can claim this distinction. With a training such as is indicated in the above remarks this young architect can scarcely fail to be successful and become well known among the leading architects of America and the South.

JOHN BANNON.

INDUSTRIAL NEWS OF INTEREST

Wants Boiler Agency.

The Interstate Machinery & Supply Co. of Wilmington, N. C., wants to represent manufacturers of boilers, and invites correspondence.

Alma Cement Co.

All communication for the Alma Cement Co. should be addressed to Wellston, Ohio, after February 15 (not January 15 as erroneously stated last week).

A Grist Mill Offered.

A complete grist mill with 80-horse-power water-power plant and 30 acres of land on the Southern Railway is offered for sale. For full details address Messrs. Chappell & Ryder, Columbus, Ga.

Timber Lands for Sale.

Some 570 acres of original pine, spruce-pine and buck-oak timber in Catawba county,

North Carolina, is offered for sale by E. L. Wilson of Dallas, N. C. Full details regarding the property can be obtained on application.

Wants Machinery Agency.

The Southern agency for a marketable class of machinery is wanted by an experienced man who states he is well acquainted in the South and wants to sell on a commission basis. Address "Machinery," Box 290, Memphis, Tenn.

Southern Sales Agency.

An established sales agency in the South with good trade connections and acquaintances is prepared to offer first-class representatives among dealers and manufacturers throughout the South on a commission or salary basis. For particulars address "Manager," No. 40 Times Building, Chattanooga, Tenn.

George C. Thompson, Architect.

Announcement is made that George C. Thompson, architect, has moved his offices from Dublin, Ga., to 132 Candler Building, Atlanta, Ga., where future correspondence must be addressed. Mr. Thompson invites manufacturers to send him their latest catalogues and price-lists.

Baeder, Adamson & Co.

Messrs. Baeder, Adamson & Co. announce the removal of their Philadelphia offices from 730 Market street to 210 Chestnut street, where correspondence should be addressed and buyers are invited to call. This firm is well known throughout the country for their sandpapers, all kinds of which, of a superior quality, has been the firm's specialty for 25 years.

Tapestry Plant for Sale.

An established plant for the manufacture of tapestry at Front Royal, Va., is to be offered for sale by H. H. Downing, trustee. The plant is to be offered publicly on March 3, and correspondence regarding the property is invited, while personal inspection by prospective purchasers is also invited. Mr. Downing believes this is a good opportunity for investment.

Garlock Packing Co.

The entire management of the Southern business of the Garlock Packing Co. of Palmyra, N. Y., will be under the management of G. P. Greenoe, who will be permanently located at the New Orleans office. Several weeks ago the Manufacturers' Record referred to the company's plans for establishing a branch office and plant in New Orleans, additional to the branch it has had in Atlanta, Ga., for some time.

W. T. Levi, Manufacturers' Agent.

Mr. W. T. Levi, for many years a resident of Charleston, W. Va., long identified with mechanical industries in that city and having a large acquaintance among the coal operators and business men generally in Charleston, has established an office as manufacturers' agent. He proposes to handle all first-class lines of steam and gasoline engines, electrical and mining machinery. Mr. Levi's offices are at 815 Kanawha street, Charleston, W. Va.

Foundry and Machine Plant.

One of the infrequent opportunities to buy established enterprises is seen in a certain Southern machine shop and foundry offered for sale by its owner. This plant has increased steadily every year since its organization 17 years ago. It builds engines and saw-mills, etc., and is operated by electricity. A full investigation is invited. Further particulars and terms can be obtained by addressing "Proprietor," care of the Manufacturers' Record, Baltimore, Md.

Blaisdell Machinery Co.

Mr. J. A. Prescott has been appointed manager of the St. Louis (Mo.) office of the Blaisdell Machinery Co. of Bradford, Pa., manufacturer of air compressors, and the Jeannette Iron Works Co. of Hazelton, Pa., manufacturer of pumping machinery. This office will have charge of the entire Southern and Southwestern territory. Mr. Prescott recently resigned, after 15 years' service, the management of the St. Louis office of the Rand Drill Co. of New York.

Manufacturing Industries Wanted.

Manufacturers who may contemplate establishing plants in the South are asked to investigate the advantages of Sumter, S. C. This is a progressive city which invites factories to locate, raw materials and sites being available for important enterprises. The Chamber of Commerce of Sumter, S. C., is open for propositions for the establishment of woodworking plants of all kinds, textile mills, electric-light and power plants, knitting mills and various others.

De La Vergne Machinery.

The single-acting compressors are being removed from the 35-ton refrigerating machine of the Wellston (Ohio) Brewing & Ice Co., which will be replaced with De La Vergne double-acting compressors, thus increasing capacity to 55 tons. The De La Vergne Machine Co. of New York has the contract. It has also a contract with Messrs. Rohe & Bro. of New York to remove single-acting compressors from refrigerating machine and substitute double-acting compressors made by the De La Vergne Company, increasing capacity from 35 to 55 tons.

Oil-Mill Equipment.

Messrs. W. P. Callaghan & Co., oil-mill-machinery manufacturers, Dayton, Ohio, have closed contract with E. R. Glass, manager of the Farmers' Cotton Oil & Trading Co., Uniontown, Ala., for a complete three-press

mill to cost about \$35,000. Mr. Glass has already constructed his seedhouse, and 1000 tons of cottonseed in storage are awaiting to be crushed. No time will be lost in erecting the mill, seeing that the crude material is accumulating. It is stated Mr. Glass refused an offer of \$21 per ton for his cottonseed, preferring to hold it for oil and cake.

Chicago Pneumatic Tool Co.

Mr. Wilber H. Traver, connected with the Rand Drill Co. for 12 years as manager of the Chicago territory until the consolidation of the Ingersoll-Rand companies, after which time he was manager of the railroad department, with headquarters in Chicago, has now severed his connection with the Ingersoll-Rand Company. Mr. Traver has accepted service with the Chicago Pneumatic Tool Co. as manager of the mining and contract department. He will devote his time and attention principally to the sale of air compressors, rock drills and mining machinery.

Enterprise Steam & Hot Water Heating Co.

Those who are interested in the Enterprise Steam & Hot-Water Heating Co. of Baltimore or likely to be in the market for estimates on construction work in heating apparatus, boilers, radiators, etc., are asked to note that the copartnership existing in the company name as stated has been dissolved. Messrs. George R. Bullen and James R. Brack composed the firm, and Mr. Bullen will continue the business under the same title. The Enterprise Company has been successful in its contracts and is prepared to furnish estimates on any work that is contemplated in its branch of industry. The offices are at 107 East Lombard street, Baltimore, Md.

Lubrication Information.

Every owner of a launch will be interested in a letter which was recently received by Messrs. Adam Cook's Sons, 313 West street, New York, the sole manufacturers of Albany Grease, from C. H. Paschall, treasurer of the American Three-Way Prism Co., Philadelphia, Pa. The letter is quoted as follows: "The sample of Albany Grease which you sent me I used on my launch, and I cannot speak too highly of same, as I not only found it a superior lubricant over the drip oil cup, but it is cleaner. It also appealed to me greatly, as it enables me to keep my engine looking neat and clean at all times. Since that time I have used Albany Grease altogether on my launch and have recommended the same to a couple of my friends."

University of Wisconsin Non-Resident Engineering Lecture Courses.

Announcement has just been made by the College of Engineering, University of Wisconsin, of the complete list of non-resident lecturers who are to address the students in engineering during the coming year. The lecturers selected include some of the most prominent authorities on special phases of engineering in the country. The lectures are not confined strictly to engineering topics, but include the consideration of various industrial and commercial problems with which the engineer is brought in contact. Among the subjects pertaining to electrical engineering, "High Speed in Modern Engineering" will be discussed by B. A. Behrend, chief electrical engineer of the Allis-Chalmers Company of Milwaukee.

Allis-Chalmers Power for West Virginia.

Electrically-driven mine haulage, electric light and the use of electric-power tools for mining coal is every day becoming a more and more familiar sight throughout the coal-mining areas of the country. The latest instance of the kind is the installation of a new Allis-Chalmers electrical power-plant equipment for the McKell Coal & Coke Co. of Glen Jean, W. Va., at the properties at Kilsyth, W. Va. The new equipment will consist of a 26x42-inch heavy-duty Allis-Chalmers engine and generator unit, 500 kilowatts, 25 cycles, with switchboard, lightning arrester, rotary converter and transformer equipment complete. The Allis-Chalmers Company of Milwaukee, Wis., will superintend the erection of the plant at Kilsyth and the substations, which are expected to be ready for operation in April.

L. J. Wagner's Work.

Mr. L. J. Wagner, builder and contractor, Rome, Ga., recently closed contract for the construction of a water-works system for the State Asylum, Milledgeville, Ga., to cost \$65,000. The machinery equipment has been contracted for. It consists of pumps from Platt Iron Works Co., Dayton, Ohio; boilers from Walah & Weldner Boiler Co., Chattanooga, Tenn.; piping from United States Cast Iron Foundry Co. and Roberts filtering system of Philadelphia, Pa. Mr. Wagner has just completed a sewerage and pipe sys-

tem at a cost of \$15,000 for the city of Rome, Ga., and under the personal management of his son, F. L. Wagner. He is now installing a water-works system at Perry, Fla., the pumping system throughout being from the Platt Iron Works Co. The towers and tanks are those made by the Chicago Building Co., Chicago, Ill.

The Manufacturers' Machinery Co.

A new Southern enterprise will be of great assistance to owners of Southern manufacturing industries and others who are constantly needing improved mechanical appliances. It is the Manufacturers' Machinery Co., which has incorporated with a capital of \$100,000 and established its main offices at 734 and 736 Baronne street, New Orleans. Sidney Marshall is president; Harry K. Ivens is vice-president, and Walter M. C. Gates is secretary-treasurer. The company will practically be a branch of many large companies which market their product in the New Orleans territory. It will handle machinery, mechanical equipment and mill supplies of all kinds. Mr. Marshall was for many years manager of A. Baldwin & Co.; Mr. Ivens was for years with the Boland & Gschwind Company, and Mr. Gates was the organizer and president of the Commercial Electric Co. Edwin Hannak will manage the company's machine shop, which will be erected at once to provide complete repair facilities, besides facilities for manufacturing some appliances which have been patented by Mr. Hannak.

West Virginia Coal Lands.

Messrs. Crawford & Ashby of Charleston, W. Va., invite negotiations for leases on 3200 acres of coal lands located in the Guyandotte River valley near Logan. The tract contains the well-known No. 2 gas coal and all other Kanawha measures, five different seams in all. Three of them have been opened and are said to show facings of five, six and nine feet of coal. The Guyandotte Valley branch of the Chesapeake & Ohio Railway provides transportation for this section. This coal tract adjoins the holdings of the Spruce River Land Co., of which W. C. Sproul of Chester, Penn., is president. Messrs. Crawford & Ashby are also offering for lease 2800 acres of coal land near Chapmansville, in the same valley and served by the said railroad. Two openings have been made here, said to show four feet of the Lewiston seam and five feet of No. 5 seam. Other properties offered are two hardwood-timber tracts of 10,000 and 15,000 acres on Coal river near the line of the Coal River branch of the Chesapeake & Ohio Railway, now being built. Carrying large quantities of white oak, this is considered a good proposition for stave-makers.

Orders for Oil Engines.

What is claimed to be the largest order ever placed for oil engines has recently been awarded to the De La Vergne Machine Co. of New York by Burnham, Williams & Co. (Baldwin Locomotive Works), Philadelphia, Pa. This order is for engines aggregating over 3300 actual horse-power. Some of these are to be installed in Philadelphia and the remainder at the firm's steel works, Burnham, Pa. The installation will consist of 125 and 250-horse-power "Hornsby-Akroyd" oil engines, and they are to be used for direct connection to electric generators and to air compressors, while others will be used for operating machine tools by belt. The "Hornsby-Akroyd" oil engine is too well known to need any further reference to it here, but the remarkable economy effected by its use can be understood when it is stated that the manufacturer claims, with crude or fuel oil at two cents a gallon, the cost of operation is one-quarter cent per actual horse-power per hour. The De La Vergne Machine Co. now claims to have the enviable record of having sold the largest gas-engine power plant, the largest ice plant and the largest oil-engine power plant.

Custodis Chimneys in the South.

It has been but a few years since perforated radial-brick blocks were introduced for chimney-construction purposes in the South; in fact, this may be termed a new industrial enterprise, and the Custodis perforated brick blocks for factory chimneys and the method of construction followed have been found to have exceptional merits which factory owners, architects and contractors recognize. American factory owners have been shown the merits of the block and the methods of construction, and many of the chimneys have been built in the South. The Fulton Bag & Cotton Mills of Atlanta, Ga., has a Custodis chimney, 225x8 feet in size; the United States Leather Co., Chattanooga, Tenn., has one 200x6 feet; the United States Navy-Yard, Pensacola, Fla., has one 150x9 feet, and the New Orleans Pumping Station, New Orleans, has one 160x6 feet 6 inches. Many other chimneys have also been built on the Custodis plan in the South, and it is stated that the tallest chimney of any description in the United States is one at Constable Hook, N. J., built of Custodis radial-brick construction, 365 feet high. There is a steady demand for the Custodis chimney, and the company which controls the methods and manufactures the chimney bricks is filling Southern orders from its factory in Alabama. Its Southern headquarters are at Atlanta, Ga., in charge of H. Clay Moore.

Many Luxfer Prisms Ordered.

The numerous contracts being made for Luxfer prisms are strong tributes to the lighting effects of that system. A. P. Wilkins, who represents the American Luxfer Prism Co. in Kansas City, Mo., has concluded a deal with the contractors for the Besse Building for Ransome system sidewalk lights. The Colby-Abbott Building of Milwaukee is fitted with the latest ideas in store fronts. It is Luxfer sidewalk prisms for daylighting the basement, and the entire front of the store is fitted with Imperial polished-plate prisms to direct the light to the rear of the store. The same system is in use in the new Mandel Bros. Annex in Chicago. Sears, Roebuck & Co. of Chicago have installed 2500 feet of prism glass in their new building. They use pressed-glass prisms in panels, and thus secure the most even distribution of light possible. The work was installed by the American Luxfer Prism Co., which manufactured the glass. The Capital Trust and Savings Bank and the David Meecher Building of Cleveland are to be fitted with concrete sidewalks under the Ransome system, using Luxfer sidewalk prisms and blank tile as an illuminant. Mr. McGee, Cleveland manager for the American Luxfer Prism Co., made this contract and closed a similar deal with the Cadillac Automobile Co. for its new building at Detroit, Mich. The American Luxfer Prism Co.'s home office is located at Chicago, Ill.

The Maydole Hammers.

The occasional user of a hammer little knows the great skill and expert care which is necessary in order to produce a hammer which fully satisfies the requirements of the stonemason, the mason, the cooper, the roofer, the prospector, the machinist, the blacksmith and other workers in a field where hammers are constantly used. The man who knows hammers knows what a Maydole hammer is. Possibly no hammer ever made has attained such a high reputation as that which David Maydole first fashioned by hand many years ago in his little shop in Norwich, N. Y. One of the most interesting articles in James Parton's contribution to the captains-of-industry series is that which tells about David Maydole, the hammer-maker. As the reputation of the hammers extended, the small shop and the individual worker grew to the present extensive manufacturing establishment and the David Maydole Hammer Co. The Maydole hammers are pressed forged from solid crucible cast steel, and each and every one is warranted to be a first-class tool in every respect, forged from steel made expressly for Maydole use, and any hammer proving to be defective with proper usage is replaced on request. Such requests are not frequent. The David Maydole Hammer Co. of Norwich, N. Y., is now distributing its latest catalogue, which is fully illustrated by photographic reproductions of the many styles and shapes of hammers which the company makes.

Foreign Sales of American Machinery

The extent to which American machinery manufacturers are penetrating to all parts of the civilized world for markets for their products is receiving a great deal of attention from the hands of "commercial" writers in the more popular magazines. This is particularly noticeable with reference to farm machinery, harvesters, irrigation and grading machinery, with more or less attention to portable railways, which are largely used in these fields. These features of American export business all have to do with the operations of tilling the soil or with construction work which precedes the actual commercial activity of a country, and little has been said of the more significant export business in machinery intended for manufacturing industries. The commercial conditions in a country are quite certainly indicated by the nature of its industries and the direction of the trend of expansion in the establishment of new enterprises. Many light railways indicate growing commerce in the interior of a country, numerous manufacturing insure activity in centers of population, but when a country is importing electrical machinery it is fairly accurate to assume that its development has long passed the preliminary stage and that it can be safely classed among the live markets of the world for American exporters. A group of recent orders taken by the General Electric Co., Schenectady,

N. Y., through its foreign department is interesting in this connection as illustrating the part taken by the electrical interests of the United States in the foreign markets of the world. The variety of uses for which this electrical apparatus is intended is also significant. From Australia comes an order for a Curtis steam-turbine generator of 500 kilowatt capacity for use in furnishing electric light and power. From Japan comes orders for the electrical equipment of a large coal mine, including a generator of 180-kilowatt output to furnish power for a number of induction motors aggregating 200 horse-power. Other Japanese orders are for induction motors amounting to 575 horse-power in sizes from 20 to 50 horse-power. South American orders include electric-railway apparatus for Brazil, consisting of three motor-generator sets of 300 horse-power each and three sets of 225 horse-power each, with necessary switchboard and electric-car equipments for 36 cars of a total capacity of 80 horse-power each. For a lighting plant in Argentine Republic is included a gas-engine-driven 130-kilowatt generator. Peru orders 16 two-motor equipments of 80 horse-power each for electric cars. Johannesburg orders nearly 100 induction motors of an aggregate capacity of 2175 horse-power. One order from India consists of four water-wheel-driven 1000-kilowatt electric generators and two of 150 kilowatts each, six 60,000-volt transformers, each of 1000 kilowatt capacity, in addition to line material, such as wires, insulators, lightning arresters, etc., for a 65-mile transmission system, and a complete outfit for 2000 kilowatts of substation equipment. For the Prussian Government Railways there are being constructed six Sprague-General Electric type M control equipments, each for two 125-horse-power motors, and 30 Tirrel voltage regulators. The Metropolitan Railways, London, has ordered equipments for 20 cars, each consisting of four 200-horse-power motors and Sprague-General Electric type M control system, and for 40 trailer cars. A French order is three 1000-kilowatt Curtis steam-turbine generators for installation at Marseilles. The foreign markets nearer home have been equally active, as is shown by the following orders which are typical of this part of the General Electric Co.'s foreign business: The Canadian General Electric Co. has ordered a 500-kilowatt Curtis steam-turbine generator for the Winnipeg Electric Railway in Manitoba; from Mexico, through the Mexican General Electric Co., orders have been received for apparatus consisting of two 300-kilowatt generators complete with exciters and generating station equipment for the Cananea Consolidated Copper Co., Sonora, Mexico; for the Minas Tecolotes y Aneas, Chihuahua, Mexico, a lot of induction motors, totaling 1009 horse-power, and two mining locomotives; for Negociacion Minera de Guadalupe, Mazatlan, Mexico, two 200-kilowatt generators with exciters and switchboard and 19 induction motors aggregating 400 horse-power; for Mexico Electric Tramways, City of Mexico, four two-motor 40 horse-power railway equipments.

TRADE LITERATURE.

A Crocker-Wheeler List.

Bulletin No. 63 of the Crocker-Wheeler Company, manufacturers and electrical engineers, Amper, N. J., presents a list of direct-current engine-type generators now in use or on order.

The Lafayette Company's Calendar.

"Thoughtless of beauty, she was beauty's self." With this quotation from James Thomson the Lafayette Mill & Lumber Co. is sending to its friends a large lithographed calendar presenting the portrait of "Beatrice" from the original painting by Rene Avigdor. The appearance of any office will be augmented by the presence of this beautiful picture. The Lafayette Mill & Lumber Co. is one of the leading sash, door, blind and lumber manufacturing enterprises of Baltimore, Md.

Contractors' Power Bulletin.

The Contractors' Power Bulletin is an illustrated and descriptive folder which is being distributed to tell contractors why the Hornsby-Akroyd oil engine is desirable for their uses. This engine is known for its merits of reliability, simplicity, economy, etc., and in the folder mentioned is shown connected to air compressors supplying air in pneumatic riveting work and in other applications. The De La Vergne Machine Co., foot of East 138th street, New York, builds the Hornsby-Akroyd oil engine.

Sawyer-Man Incandescent Lamps.

The title of this brief reference to a well-known product is usually suggested by the mere thought of electric lamps. Sawyer-

Man lamps are for incandescent lighting in all candle-powers, voltages and efficiencies. They are in such great demand and are so well known that little need be said about them except to state that the manufacturer's latest catalogue of these lamps is now being distributed. The lamps are made by the Sawyer-Man Electric Co. of New York and sold by the Westinghouse Electric & Manufacturing Co. of Pittsburg, Pa.

Some Cotton Statistics.

The January number of Cotton Chats contains some interesting figures relative to cotton statistics. It presents a review of the crops and average prices from the seasons of 1888-89 to 1904-05, together with comparisons of various estimates made before the close of the seasons from 1897-98 down to 1904-05 made by various "crop guessers." Additional data given is the number of spindles in use throughout the world during 1905, the estimates being given in two columns of high and low figures obtained from various sources. Cotton Chats is published by the Draper Company of Hopedale, Mass., the well-known manufacturer of the Northrop loom.

Modern Trucks for Efficient Handling.

Trucks are largely used in industrial establishments. They promote the efficient handling of materials, merchandise and other articles in and around manufacturing plants, warehouses and other scenes of business activity. Their design and manufacture has attracted the attention of discerning workers, and among the manufacturers who make a specialty of trucks is the George P. Clark Company of Windsor Locks, Conn. This company is sending out to prospective buyers an illustrated pamphlet of the Clark trucks, showing a few of the styles especially adapted for use in printing plants and calling attention to the fact it makes them in various other styles to meet the individual needs of customers.

Bury Air Compressors.

Bulletin No. 30 of the Bury Compressor Co. (successor to Herron & Bury Manufacturing Co.) describes the company's duplex and compound air compressors, steam and belt driven. These compressors have earned an enviable reputation in the field of operations where they are demanded, and by always using great care in the selection of materials and in manufacturing processes, and in keeping the designs strictly up to date, the company is steadily increasing its sales. Bulletin No. 30 gives a complete detailed description of these compressors, the text being accompanied by photographic reproduction of the machines and by tables and other data of value to purchasers who may be in the market for this class of equipment. The company is located at Erie, Pa.

Modern Hydraulic Jacks.

There is now being distributed a complete illustrated catalogue of the improved hydraulic jacks manufactured by the Watson-Stillman Company, 46 Dey street, New York city. These jacks are the result of over 50 years' experience in designing and manufacturing this class of tools. They have been used in large quantities for many years, and that the demand still continues large and is steadily increasing is proof that the merits of the Watson-Stillman jacks are becoming better known every day to the purchasing public. The catalogue mentioned is an assortment of sheets selected from over 600 pages of printed matter especially relating to this make of jacks. The Watson-Stillman hydraulic jacks are made for all possible uses in and around industrial plants, on railways and elsewhere.

The Hunt "Industrial" Railway.

A system of cars or tracks in and around a manufacturing establishment is one of the important factors in promoting economical operations in any plant. Railway equipment of this character has been extensively adopted in the industrial world, and it has been largely due to specialists in their manufacture and installation that the best results are being obtained. There are still many instances where managers, even progressive men, do not entirely realize the saving made by the use of a narrow-gauge track and suitable cars in handling raw and finished materials. They may obtain some data for their consideration by examining catalogue No. 6511, which tells about the Hunt "Industrial" Railway. These equipments are the product of the C. W. Hunt Company of West New Brighton, Staten Island, New York. This company has built up an enduring reputation because of its labors in this field, and is prepared at any time to demonstrate its claims and consult with purchasers who want expert assistance in the selection of this class of facilities.

Hendrick Perforated Metals.

It seems to be generally admitted that perforated metals are greatly superior for screening purposes. This is because the perforated metals are stronger, consequently durable. The size of hole or mesh is more uniform, and perforated metal screens may be arranged with certain portions left blank, which is an impossibility with wire-mesh goods. Revolving screens for coal, ore, etc., are made with one or more sizes of perforations, as desired. An extensive plant for the manufacture of perforated metals is now being operated at Carbondale, Pa., by the Hendrick Manufacturing Co., which is issuing its initial catalogue. The company calls attention to the fact that there is a rapidly-increasing demand for perforated metals, and that its plant and the experience of its management will result in prompt shipment of the best class of products in mining industry and wherever else perforated metals are used; New York office at 149 Broadway, New York.

Electricity for Mining.

It would be difficult, within limits which would not be tiresome, to more than mention the electrical systems, methods, processes, machines and appliances that have been proposed for use in connection with mining industries. Yet while the possibilities for the application of electricity to mining appear boundless, the number of duties at present generally performed by this agent in purely mining operations are comparatively few. This use of electricity in mining has developed more especially in coal production, and one of the greatest factors in American coal production is the general use of electricity for securing maximum output from minimum workings. There is now being issued a pamphlet entitled "The Application of Electricity to Mining," by F. L. Sessions. This pamphlet is replete with interesting information that should be known to every developer of coal lands, and it shows various types of the latest equipments designed for mining by that successful specialist in this branch of mechanical ingenuity, the Jeffrey Manufacturing Co. of Columbus, Ohio.

The Southern Gypsum Co.

There is an increasing demand for rock gypsum because of the large quantities required for manufacturing purposes, especially in making hard-wall or gypsum plaster. This plaster has only been introduced in the South in the last several years, but already it has become a staple and necessary article. There has recently been formed an organization which intends to be active in supplying rock gypsum in the South and to develop a Southern gypsum deposit. This deposit is located near Saltville, Va., and is said to be the only workable deposit of rock gypsum in the South. A prospectus now being issued refers to the development of this property by the Southern Gypsum Co. and presents some interesting data showing the possibilities of profit for the enterprise. It is still possible for investors to subscribe to the capital stock of the Southern Gypsum Co., information regarding which can be obtained by writing the main offices in the City National Bank Building, Greensboro, N. C. Mr. W. E. Cochran of Greensboro, N. C., and Butler, Pa., is the originator and manager of this enterprise, and can also be addressed for particulars.

Alberger Condenser Co.

Catalogue No. 6 of the Alberger Condenser Co. is now ready for distribution. It is especially devoted to the Wainwright even-flow feed-water heaters and expansion joints, but it also contains illustrations of barometric and surface condensers, cooling towers, vacuum pumps and pumping engines. It is a well-established principle of steam engineering that a fuel-saving of about 1 per cent, is made by each increase of 10 degrees in the temperature of the boiler-feed water. Furthermore, it is conceded that a great saving in the wear and tear of steam boilers is effected by heating water before introducing it to the hot surface. Hence every effort is made now to utilize for this purpose the waste heat of the power plants. This utilization is effected by the equipments which the Alberger Condensing Co. manufactures and installs. The company has been especially successful in its chosen specialty, and is prepared to make surveys of plants and to furnish plans, drawings, specifications and estimates, and to contract for heaters, expansion joints and condensing apparatus for all kinds of service. Its offices are at 95 Liberty street, New York city.

Arthur Koppel Railway Materials.

It may be said without fear of contradiction that progressive managers of industrial plants are those who are always on the alert to improve their establishments in any way

that tends to the improvement and economy of their work. One of the classes of manufactured products which has come into extensive use in industrial plants is the industrial railway. Some designers and manufacturers have made a specialty of this branch, among them being the Arthur Koppel Company of 66 Broad street, New York, which has offices in the other principal cities of the world. The Arthur Koppel Catalogue No. 111, which is for the year 1906, has just been issued. It describes and illustrates the Koppel industrial narrow and standard gauge railway materials of all descriptions, complete industrial-railway equipments for hand, steam and electric power. In this new catalogue, which is a revised and condensed form, brought up to date of previous Koppel publications, it has been the endeavor to show only such materials as rails, steel ties, switches, turntables and steel and wooden cars as have been found in many years' experience to be standards used all over the country. The information presented by the Koppel Company should not be overlooked by any purchaser who contemplates using equipment of the character referred to.

Complete Power Plants.

An illustrated bulletin now being distributed is designed and published for the purpose of presenting to prospective purchasers the many desirable features and advantages to be obtained from placing all contracts for the apparatus entering into the installation of a complete steam or electric plant with one responsible company. The manufacturer or owner confronted with the problem of installing a power plant or the alteration or enlargement of an existing installation usually finds himself in need of sound engineering assistance in order that he may select and install in the best manner the machinery that is suited to his necessities. He will therefore find of assistance the facts contained in the bulletin mentioned. This bulletin is issued by the A. B. Granger Company of New York, Philadelphia and Pittsburg, and it calls attention to the exceptional facilities offered by that company for fulfilling every requirement of the purchaser of power equipment. The A. B. Granger Company contracts for complete power plants, including steam and electrical transmission for industrial and manufacturing enterprises, central-station and isolated lighting and power plants, hotels, office buildings, apartment-houses, etc. Its bulletin includes an outline of the varied lines of machinery handled by the company and calls attention to the scope of its contract operations.

The Ohio Injector Co.

In issuing its new catalogue the Ohio Injector Co. makes a statement which will be found of considerable interest to those who are now or likely to be in the market for injectors of any kind. The company says: "Ever since injectors have been made it has been possible to buy the crude and unfinished product of inventors at almost any price. New injectors are yearly forced upon the market at whatever price they will bring, but actual experience has proven that the majority are faulty in design and construction, costly and unreliable in operation, short-lived and dangerously unsafe, and have disappointed the purchaser in their usefulness for practical use. Our 23 years' experience in manufacturing injectors enables us to furnish injectors containing the very best mechanical features, economy in the use of steam, absolute reliability and ease of operation. No expense is spared in making improvements which add to the efficiency and durability of the goods we manufacture, and none adopted that are not thoroughly tested. Any information that may be desired relative to injectors made special to meet certain conditions or failure to understand the directions as herein stated will be most cheerfully furnished." The Ohio Injector Co. manufactures injectors and ejectors, sight-feed lubricators, oil cups, etc. Its new catalogue is fully illustrated and describes at length the company's product. The Ohio Injector Co. is located at Wadsworth, Ohio.

The Apex (N. C.) Industrial Club has been organized with Messrs. Percy J. Olive, president; Robert J. Bolling, vice-president; J. R. Cunningham, secretary and treasurer; A. V. Bancroft, L. S. Olive, W. H. Harwood, E. W. Franklin, W. H. F. Branch, Q. I. Hudson, L. H. Upchurch, A. C. Hughes and J. A. Warren, executive committee.

It is reported that the Citizens' Bank of Savannah and the Southern Bank of the State of Georgia, both at Savannah, are to consolidate.

The Iron and Metal Trades.

The *Iron Age* in its weekly review says: "The markets, generally speaking, are quiet, and in some spots easier. The tonnage of new orders being placed has grown less, chiefly because buyers are well covered far into the year, and because sellers have contracted for their output. Consumption continues at an enormous rate, and shipments of finished iron and steel are close to the record—an extraordinary fact in midwinter. As yet the figures are not complete, but it seems probable that the shipments for January will equal if they do not exceed those of October, the highest thus far attained in the history of the Steel Corporation. The uncertainties in the labor situation in the coal-mining industry are causing some consumers to start stocking up pig-iron and coke. It must be remembered that the Connells-ville, Pocahontas and Alabama coal mines, upon which the iron industry chiefly relies, are not affected by whatever action the miners' union takes. So far as steam coals are concerned, the Connells-ville region may be relied upon to supply what deficiency might occur in the requirements for the leading interest. The pig-iron markets show some easing off all around for forward delivery. This holds good for the Central West in basic pig and in foundry irons, and notably for the lower grades of Southern iron in the markets which that product reaches. In the East steel irons continue very firm.

"A particularly ridiculous story, emanating from this side, seems to have stirred up the English markets. It was to the effect that 30,000 tons of Alabama pig-iron had been sold for delivery in England, to be shipped in cotton ships. Relative prices abroad and here do not admit of such a movement now.

"Nor is there any truth in the reports that the Steel Corporation has recently made large sales of steel billets to Europe. The company is confining itself to sales of finished material exclusively, not having any crude steel available. The demand from foreign countries is active."

Orders for 3000 Coal Cars.

Another big contract indicating the continued increase of industrial development throughout the South has been awarded. It calls for 3000 steel hopper coal cars of 100,000 pounds capacity each, 2000 being for the Fairmont Coal Co. and 1000 for the Somerset Coal Co. From \$3,000,000 to \$3,500,000 will be the cost of these cars. This is probably one of the largest contracts of its kind ever placed by an industrial corporation, and it is an extremely gratifying fact that a Baltimore manufacturing company obtained the award and will build the cars. Several other large contracts of this character have been placed with the same company in Baltimore, and this is continued evidence of the growing importance of this city as a manufacturing center. The contract for the cars has been awarded to the South Baltimore Steel Car & Foundry Co. To be more exact, the contract has been arranged, and merely awaits the routine of a meeting of the directors of the two coal companies to sanction the action of the managing officers. These cars will be used by the purchasers for shipping the output of their soft-coal mines in West Virginia.

Industrial Locations.

The Chicago & Northwestern Railway Co. will promptly furnish reliable information regarding the many suitable points on its lines for manufacturing establishments. Thriving cities, abundant material and fine market facilities. Parties seeking locations for new industries should apply for particulars. Address Industrial Department, Chicago & Northwestern Railway, 215 Jackson Boulevard, Chicago. advt.

FINANCIAL NEWS

The MANUFACTURERS' RECORD invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

SECURITIES AT BALTIMORE.

Last Quotations for the Week Ended February 7, 1906.

Railroad Stocks.	Par.	Bid.	Asked.
Atlantic Coast Line.....	100	162	162½
Atlantic Coast Line of Conn.....	100	425	440
Georgia Sou. & Fla. 1st Pfd.....	100	99	99½
Georgia Sou. & Fla. 2d Pfd.....	100	72	72
Maryland & Pennsylvania.....	100	29½	30
Norfolk Railway & Light.....	25	14	15
Seaboard Railway Common.....	100	35	35
Seaboard Railway Preferred.....	100	60	60
United Railways & Elec. Co.....	50	17½	17½
Bank Stocks.			
Citizens' National Bank.....	10	28	28½
Commercial & Far. Nat. Bank.....	100	132½	140
Com. & Far. Nat. Bk. Blue Cfs.....	100	145	160
Drovers & Mech. Nat. Bank.....	100	250	250
German Bank.....	100	108	125
Marine National Bank.....	25	37½	40
Maryland National Bank.....	20	24	25
Merchants' National Bank.....	100	184½	185
National Bank of Baltimore.....	100	117	119
National Exchange Bank.....	100	181	181
National Howard Bank.....	10	11½	11½
National Marine Bank.....	30	37½	40
National Mechanics Bank.....	10	26	26½
National Union Bank of Md.....	100	115	120
Old Town Bank.....	10	11½	11½
Trust, Fidelity and Casualty Stocks.			
American Bonding & Trust.....	50	50	55
Baltimore Trust & Guarantee.....	100	344½	346
Continental Trust.....	100	196	200
Fidelity & Deposit.....	50	142	145
Fidelity Trust.....	100	210	215
International Trust.....	100	153	155
Maryland Trust.....	100	142	154
Maryland Trust Preferred.....	100	142½	143
Mercantile Trust & Deposit.....	50	142	145
Security Storage & Trust.....	100	115	115
U. S. Fidelity & Guaranty.....	100	137½	137½
Miscellaneous Stocks.			
Alabama Con. Coal & Iron.....	100	75	77½
Ala. Con. Coal & Iron Pfd.....	100	95	96½
Consolidated Gas.....	100	84	85
Consolidated Cotton Duck.....	50	14½	15
Consolidated Cotton Duck Pfd.....	50	37½	38
Consolidated Coal.....	100	90	95
G. B. & S. Brewing Common.....	100	8½	9½
Houston Oil.....	12	12½	12½
Houston Oil Pfd.....	48½	49	49
International Mer. Marine.....	100	36	36½
Internat. Mer. Marine Pfd.....	100	139½	140
Mer. & Miners' Trans. Co.....	100	184	190½
Railroad Bonds.			
Atlanta & Charlotte 1st 7s, 1907.....	102	102	102
Atlan. Coast Line 1st Con. 4s, 1922.....	101½	101½	101½
Atlantic Coast Line (Conn.) 5s.....	113	114	114
Atlantic Coast Line (S. C.) 4s.....	95	95	95
Atlan. Coast Line (S. C.) 4s, 1948.....	98	98	98
Carolina Central 4s, 1949.....	98	98	98
Charleston & West. Car. 1946.....	113	113	113
Coal & Iron Railway 5s, 1920.....	106	107½	107½
Columbia & Greenville 1st 6s, 1916.....	115	115	115
Florida Southern 4s, 1940.....	98	98½	98½
Georgia & Alabama 5s, 1945.....	110½	111	111½
Georgia, Car. & North. 1st 5s, 1929.....	111	111½	111½
Georgia Pacific 1st 6s, 1923.....	122½	122½	122½
Georgia South. & Fla. 1st 5s, 1945.....	114	114	114
Macon Ry. & L. 1st Con. 5s, 1943.....	99	100	100
Maryland & Pennsylvania 4s, 1951.....	96	97	97
Piedmont & Cum. 1st 5s, 1911.....	106	107	107
Potomac Valley 5s.....	115½	115½	115½
Richmond & Danville Gold 6s, 1915.....	114½	114½	114½
Seaboard Air Line 4s, 1950.....	90½	90½	90½
Seaboard Air Line 5s, 10-year, 1911.....	102½	103	103
Sparrow's Point 4½s.....	93	93	93
South Bound 5s, 1941.....	113	113½	113½
Western Maryland new 4s, 1952.....	88½	89	89
West Virginia Central 1st 5s, 1911.....	109	109	109
Wilmington & Wel. Gold 5s, 1935.....	118	118	118
Street Railway Bonds.			
Atlanta Con. St. Ry. 5s.....	105½	106	106
Baltimore City Passenger 5s, 1911.....	106½	106½	106½
Central Ry. Con. 5s (Balt.), 1932.....	116½	117½	117½
Charleston Con. Electric 5s, 1909.....	96½	97½	97½
City & Suburban 5s (Balt.), 1922.....	113	113½	113½
City & Suburban 5s (Wash.), 1948.....	107	108	108
Lake Roland Elev. 5s (Balt.), 1942.....	120½	120½	120½
Nashville Street Railway 5s.....	106	106	106
Norfolk Railway & Light 5s.....	99½	100	100
North Baltimore 5s, 1942.....	119	123½	123½
United Railways 1st 4s, 1949.....	94	94½	94½
United Railways Inc. 4s, 1949.....	72	72½	72½
Miscellaneous Bonds.			
Alabama Consol. Coal & Iron 5s.....	93	94	94
Consolidated Gas 6s, 1910.....	106	106½	106½
Consolidated Gas 5s, 1939.....	112½	113½	113½
Consolidated Gas 4½s, Cfs.....	100½	100½	100½
G. B. & S. Brewing 1st 2½s.....	63½	63½	63½
G. B. & S. Brewing 2d Income.....	32	33	33
Maryland Telephone 5s.....	97½	102½	102½
Mt. V. & Woodby's Cot. Duck 5s.....	88	88½	88½
Mt. V. & Woodby's Cot. Duck Inc.....	42½	50	50
United Elec. Light & Power 4½s.....	97	97	97
Virginia Def. Brown Bros. Cfs.....	24	24	24

SOUTHERN COTTON-MILL STOCKS

Quotations Furnished by Hugh MacRae & Co., Wilmington, N. C. for Week Ending February 5.

	Rid.	Asked.
Abbeville Cotton Mills.....	93	98
Aiken Mfg. Co. (S. C.).....	84	91
Anderson Cotton Mills (S. C.).....	104	106
Arkwright Mills (S. C.).....	115	120
Augusta Factory (Ga.).....	79	85
Avondale Mills (Ala.).....	98	98
Belton Mills (S. C.).....	110	115
Bibb Mfg. Co. (Ga.).....	101	101
Brandon Mills (S. C.).....	102	107
Cabarrus Cotton Mills (N. C.).....	137	137
Chadwick Mfg. Co. (N. C.) Pfd.....	102	102
Clifton Mfg. Co. (S. C.).....	90	91
Clifton Mfg. Co. (S. C.) Pfd.....	106	106
Clifton Mfg. Co. (S. C.) Pfd.....	106	106
Clinton Cotton Mills (S. C.).....	146	146
Columbus Mfg. Co. (Ga.).....	106	106
Courtenay Mfg. Co. (S. C.).....	100	100
Dallas Mfg. Co. (Ala.).....	82	86

Darlington Mfg. Co. (S. C.).....	58	58
Eagle & Phenix Mills (Ga.).....	119	119
Easley Cotton Mills (S. C.).....	125	128
Enoree Mfg. Co. (S. C.).....	77	91
Enoree Mfg. Co. (S. C.) Pfd.....	99	102
Enterprise Mfg. Co. (Ga.).....	79	92
Exposition Cotton Mills (Ga.).....	200	200
Gaffney Mfg. Co. (S. C.).....	80	80
Gainesville Cotton Mills (Ga.).....	50	50
Granby Cotton Mills (S. C.) 1st Pfd.....	59	66
Greenville Mfg. Co. (S. C.).....	155	165
Greenwood Cotton Mills (S. C.).....	98½	98½
Grendel Mills (S. C.).....	107	116
Henrietta Mills (N. C.).....	200	200
King Mfg. Co. John P. (Ga.).....	97	103
Lancaster Cotton Mills (S. C.).....	108	108
Lancaster Cot. Mills (S. C.) Pfd.....	94	98
Langley Mfg. Co. (S. C.).....	90	96
Laurens Cotton Mills (S. C.).....	150	160
Limestone Mills (S. C.).....	99	101
Lockhart Mills (S. C.).....	97	101
Lockhart Mills (S. C.) Pfd.....	97	101
Louise Mills (N. C.).....	94	94
Louise Mills (N. C.) Pfd.....	102	102
Marbleboro Cotton Mills (S. C.).....	73½	80
Mills Mfg. Co. (S. C.).....	95	100
Mills Mfg. Co. (S. C.) Pfd.....	96	100
Monaghan Mills (S. C.).....	98	102
Monarch Cotton Mills (S. C.).....	83	91
Newberry Cotton Mills (S. C.).....	110	116
Norris Cotton Mills (S. C.).....	102	102
Odell Mfg. Co. (N. C.).....	77	86
Orangeburg Mfg. Co. (S. C.) 1st Pfd.....	79	97
Orr Cotton Mills (S. C.).....	174	180
Pacolet Mfg. Co. (S. C.).....	100	104
Pacolet Mfg. Co. (S. C.) Pfd.....	100	104
Pelzer Mfg. Co. (S. C.).....	168	168
Piedmont Mfg. Co. (S. C.).....	169	171
Poe Mfg. Co. (S. C.).....	121	132
Raleigh Cotton Mills (N. C.).....	100	100
Richland Cot. Mills (S. C.) 1st Pfd.....	50	50
Roanoke Cotton Mills (N. C.).....	127	127
Saxon Mills (S. C.).....	99	103
Shelby Mfg. Co. (Ga.).....	59	68
Southern Cotton Mills (N. C.).....	89	89
Spartan Mills (S. C.).....	135	135
Springstein Mills (S. C.).....	100	100
Trion Mfg. Co. (Ga.).....	131	142
Tucapau Mills (S. C.).....	142	142
Victor Mfg. Co. (S. C.).....	116	116
Warren Mfg. Co. (S. C.).....	99	101
Warren Mfg. Co. (S. C.) Pfd.....	106	106
Washington Mills (Va.).....	17	20
Washington Mills (Va.) Pfd.....	95	99
Whitney Mfg. Co. (S. C.).....	120	120
Wiscasset Mills (N. C.).....	119	125
Woodruff Cotton Mills (S. C.).....	100	107

Quotations Furnished by William S. Glenn, Broker, Spartanburg, S. C., for Week Ending February 6.

	Bid.	Asked.
Abbeville Cotton Mills (S. C.).....	93	98
Aetna Cotton Mills (S. C.) Pfd.....	70	70
Aiken Mfg. Co. (S. C.).....	87	90
American Spinning Co. (S. C.).....	107	107
Anderson Cotton Mills (S. C.).....	104	104
Arcadia Mills (S. C.).....	90	90
Arkwright Cotton Mills (S. C.).....	115	115
Augusta Factory (Ga.).....	80	85
Avondale Mills (Ala.).....	96	96
Belton Mills (S. C.).....	109	112
Bibb Mfg. Co. (Ga.).....	100	100
Brandon Mills (S. C.).....	102	110
Brogan Mills (S. C.).....	75	80
Cabarrus Cotton Mills (N. C.).....	137	137
Chadwick Mfg. Co. (N. C.) Pfd.....	103	103
Chidlow Mills (S. C.).....	90	95
Clifton Mfg. Co. (S. C.).....	120	125
Clifton Mfg. Co. (S. C.) Pfd.....	103	103
Clinton Cotton Mills (S. C.).....	140	140
Columbus Mfg. Co. (Ga.).....	92	95
Courtenay Mfg. Co. (S. C.).....	100	103
Dallas Mfg. Co. (S. C.).....	84	90
D. E. Converse Co. (S. C.).....	115	115
Eagle & Phenix Mills (Ga.).....	120	120
Easley Cotton Mills (S. C.).....	120	125
Enoree Mfg. Co. (S. C.).....	85	90
Enoree Mfg. Co. (S. C.) Pfd.....	100	103
Enterprise Mfg. Co. (Ga.).....	70	85
Exposition Cotton Mills (Ga.).....	174	200
Gaffney Mfg. Co. (S. C.).....	80	80
Gainesville Cotton Mills (Ga.).....	50	50
Greenwood Cotton Mills (S. C.).....	97	97
Gluck Mills (S. C.).....	97	97
Granby Cot. Mills (S. C.) 1st Pfd.....	50	50
Granville Mills (S. C.).....	155	160
Greenwood Cotton Mills (S. C.).....	93	100
Grendel Mills (S. C.).....	107	110
Hartsville Cotton Mills (S. C.).....	85	90
Henrietta Mills (N. C.).....	200	200
Inman Mills (S. C.).....	80	87
King Mfg. Co. J. P. (Ga.).....	107	107
Lancaster Cotton Mills (S. C.).....	100	100
Lancaster Cot. Mills (S. C.) Pfd.....	95	99
Langley Mfg. Co. (S. C.).....	92	96
Laurens Mills (S. C.).....	155	155
Limestone Mills (S. C.).....	97	97
Lockhart Mills (S. C.).....	96	101
Lockhart Mills (S. C.) Pfd.....	96	101
Loray Cotton Mills (N. C.) Pfd.....	89	89
Louise Mills (N. C.).....	94	94
Louise Mills (N. C.) Pfd.....	102	102
Marbleboro Cotton Mills (S. C.).....	73	79
Mayo Mills (N. C.).....	150	209
Mills Mfg. Co. (S. C.).....	95	95
Mills Mfg. Co. (S. C.) Pfd.....	99	101
Mollohon Mfg. Co. (S. C.).....	87	87
Monaghan Mills (S. C.).....	98	104
Monarch Cotton Mills (S. C.).....	80	85
Newberry Cotton Mills (S. C.).....	112	112
Ninety-Six Cotton Mills (S. C.).....	90	90
Norris Cotton Mills (S. C.).....	100	103
Odell Mfg. Co. (N. C.).....	77	80
Orangeburg Mfg. Co. (S. C.) Pfd.....	80	80
Orr Cotton Mills (S. C.).....	103	103
Pacolet Mfg. Co. (S. C.).....	175	180
Pacolet Mfg. Co. (S. C.) Pfd.....	102	104
Pelzer Mfg. Co. (S. C.).....	165	165
Piedmont Mfg. Co. (S. C.).....	165	175
Poe Mfg. Co. F. W. (S. C.).....	125	130
Raleigh Cotton Mills (N. C.).....	100	100
Richland Cot. Mills (S. C.) Pfd.....	50	50
Roanoke Mills (S. C.).....	115	115
Saxon Mills (S. C.).....	99	103
Sibley Mfg. Co. (Ga.).....	58	63
Southern Cotton Mills (N. C.).....	80	80
Spartan Mills (S. C.).....	132	140
Springstein Mills (S. C.).....	100	100
Trion Mfg. Co. (Ga.).....	132	140
Tucapau Mills (S. C.).....	147	147
Victor Mfg. Co. (S. C.).....	107	113
Warren Mfg. Co. (S. C.).....	90	106
Warren Mfg. Co. (S. C.) Pfd.....	107	107
Washington Mills (Va.).....	17	22
Washington Mills (Va.) Pfd.....	93	96
Whitney Mfg. Co. (S. C.).....	135	135
Wiscasset Mills (N. C.).....	119	125
Woodruff Cotton Mills (S. C.).....	104	107

banks, \$1,625,216; capital, \$600,000; surplus fund, \$400,000; undivided profits, \$201,223; circulation, \$500,200; deposits, \$5,057,398; total resources, \$7,443,466. The officers are John B. Purcell, president; John M. Miller, Jr., vice-president and cashier; Chas. R. Burnett and J. C. Joplin, assistant cashiers.

The Savannah Trust Co.

Among the comparatively new financial institutions of Savannah, Ga., is the Savannah Trust Co., which has recently issued a statement that is of considerable interest. The company's report at the close of business on December 30 last presents facts for the consideration of those who may think of needing the services of a Southern financial institution. The statement of deposits shows that at the end of the first year's business in 1903 the company's deposits aggregated \$33,000; at the end of 1904 they aggregated \$686,000, and December 30, 1905, they amounted to \$1,081,000. These figures indicate that the company's growth has been rapid from the inception, and that the personnel of its management has attracted to its clientele business enterprises which have occasion to need the services of a general banking and trust company. The company's progress is also indicated in referring to its surplus and undivided profits, which amount to nearly \$132,000. Since its organization the Savannah Trust Co. has paid dividends amounting to \$75,000. Wm. W. Mackall is president; George J. Baldwin, vice-president; Wm. B. Davis, secretary-treasurer, and John H. Strous, assistant secretary and treasurer. The directors include investors and financiers, railway managers and business men of Savannah, besides Messrs. R. G. Erwin and C. Sidney Shepard of New York and Edwin S. Webster of Stone & Webster, Boston, Mass.

Messrs. F. R. Pemberton & Co.

Among the well-known financial institutions of New York city is the banking firm of Messrs. F. R. Pemberton & Co., until recently of No. 15 Wall street. The firm is announcing that its offices have been removed to the Mills Building, 35 Wall street, where correspondence should be addressed and clients can call in future. Offices are also maintained in Philadelphia.

New Corporations.

It is reported that a new savings bank is to be established at Melittota, Md.

The Merchants and Farmers' Bank of Cleveland, N. C., has opened for business.

The Bank of Marble Hill at Marble Hill, Mo., has begun business with \$15,000 capital.

The Bank of Bryon is being organized at Bryon, Ga., with \$25,000 capital by local citizens.

The Bank of Clover at Clover, N. C., capital \$12,000, has begun business with Jas. A. Page as cashier.

Arrangements are reported being made by F. D. Lucas and O. E. Grecian to open a new bank at Bliss, O. T.

It is reported that a new bank is to be organized at Glasgow, Ky., by L. W. Preston, J. P. Depp and others.

The Cotton Planters' Bank has been incorporated at Jonestown, Miss., with \$50,000 capital by B. Seelig, C. T. French and others.

The Goldsboro Investment Co., capital \$25,000, is reported organized at Goldsboro, N. C., by R. J. Corbitt, D. H. Kornegay and others.

The People's Bank of Gordon, Ga., has been incorporated with \$25,000 capital by W. A. Jones, J. W. Brooks, I. B. Stinson and J. E. Bell.

The Commercial Exchange Bank of

Hominy, O. T., capital \$15,000, is reported to have begun business with Fred Erickson of Tulsa as cashier.

The Bank of Cape Fear, recently organized at Lillington, N. C., has moved to Dunn, N. C., and opened for business with General Nelson president and C. Russell Young cashier.

The First National Bank of Columbia, Ala., has been approved; capital \$25,000. The organizers are J. M. Koonce, E. R. Malone, Robert Boyd, A. Y. Malone and Ray D. Clark.

The First National Bank of Rule, Texas, capital \$25,000, has been approved. The incorporators are J. L. Jones of Haskell, B. Cox, T. B. Russell, J. F. Jones and A. C. Foster.

The Bank of Carriere at Carriere, Miss., has been granted a charter; capital \$25,000. The incorporators are R. R. Perkins, L. P. Landis, B. Breland and others; capital stock \$25,000.

The Caddo Bank & Trust Co. of Caddo, I. T., capital \$10,000, has been granted a charter. The incorporators are Carlton Gage of Dallas, D. L. Countryman and J. H. Cossart of Caddo.

The Bank of Vidalia at Vidalia, Ga., capital \$25,000, has been incorporated by S. L. McColsky, J. W. Mathews, S. B. Meadows, W. V. Peacock and J. W. Poe, all citizens of Vidalia.

The Trust Davidson Insurance Co. has been incorporated at Lexington, N. C., with \$15,000 capital by E. P. Wharton, Greensboro, and J. W. Noell and R. L. Burkhead of Lexington.

The Allen National Bank of Edna, Texas, has been approved; capital \$30,000. The organizers are J. W. Allen, Henry C. Fristoe, C. S. E. Holland, Theo. Buhler and W. R. Sells.

The First National Bank of Chickasha, I. T., capital \$100,000, has been approved. The organizers are T. H. Dwyer, Chickasha; W. E. Dwyer, D. H. Sigmon, H. B. Spencer and C. H. Russell.

The Farmers' National Bank of Fort Gibson, I. T., capital \$25,000, has been approved. The organizers are Sid Garrett, I. H. Nakdimen, F. C. Hubbard, J. L. Dabbs and Connell Rogers.

The Seawall National Bank of Galveston, Texas, capital \$100,000, has elected the following officers: Burt H. Collins, president; F. M. Hamilton, vice-president; B. H. Walker, cashier.

It is reported that the Georgia branch of the Farmers' Co-operative and Educational Union has decided to organize the Farmers' Union State Bank at Thomas-ton, Ga., with \$100,000 capital.

The Farmers' Bank of Jett, O. T., has been authorized to begin business with \$10,000 capital. The officers are J. P. Miller, with S. F. Randolph as vice-president and S. W. Tucker as cashier.

The Fayetteville Banking Co. of Fayetteville, Ga., capital \$50,000, has been granted a charter. The incorporators are S. T. Blalock, A. D. Blalock and W. H. Hollingsworth, all of Fayetteville.

The First National Bank of Hartselle, Ala., has been authorized to begin business with \$25,000 capital. The officers are John T. Davis, president; J. A. Tarver, vice-president; A. E. Jackson, cashier.

The Fidelity Loan & Trust Co. has begun business at Chester, S. C., with the following officers: M. S. Lewis, president and treasurer; John C. McFadden, vice-president; John S. Lindsay, secretary.

The City National Bank of Roanoke, Va., capital \$200,000, has been approved. The organizers are D. M. Taylor of Roanoke, Va., and John W. Woods, H. T. Hall, George W. Payne and M. W. Turner.

The Century Savings and Loan Association has been incorporated at Baltimore, Md., with \$130,000 capital by J. Dallam Wise, Joseph Hubbard, Harry M. Ramey,

J. Thomas Overby and William Criswell. The National Bank of Greenville, N. C., has been approved; capital \$50,000. The organizers are L. I. Moore, Greenville, N. C.; Harry Skinner, Jas. F. Davenport, L. W. Tucker, F. G. James and E. A. Meyl, Jr.

The Wallis State Bank has been organized at Wallis, Texas, with \$10,000 capital. The directors are C. I. Dabney, J. W. Johnston, D. N. Harris, R. W. Guyler, John Thompson, Leonard Tillotson and W. Mattiae.

The Gastonia Insurance & Realty Co. has been incorporated at Gastonia, N. C., with \$100,000 capital. The incorporators are W. T. Rankin, C. B. Armstrong, S. M. Robinson and Frost Tomuce, all of Gastonia.

The Merchants' National Bank of Covington, Ky., capital \$100,000, has been approved. The organizers are Jos. J. Moser, R. L. Crigler, C. E. Clark, B. Eileman and H. N. Dine; correspondent, Ed. E. Walker, Covington.

The First National Bank of Liberty, Texas, capital \$10,000, has been granted a charter. The incorporators are J. A. Mynatt, J. O. Lasour, Joseph Riviere, J. A. Lovett, Frank Abshier, Ed. Pruett and E. F. Cameron.

The Tidewater National Bank of Norfolk, Va., capital \$200,000, has been approved. The organizers are J. Elmer White, Edward W. Wolcott, C. A. Everhart, S. E. Duke and Alexander Hofheimer, all of Norfolk.

The Bank of Wheatley at Wheatley, Ark., has elected the following officers: Ike Slager, president; W. S. Hemenway, vice-president; W. J. Thompson, secretary; Alfred M. Goldberg, treasurer; C. F. Hemenway, cashier.

The Bank Clerks' Investment Co. of Pine Bluff, Ark., has been organized with \$100,000 capital. The officers are: President, C. W. Pettigrew; vice-president, Harry Hanf; secretary, E. H. Sloss; treasurer, V. D. Webb.

The Bank of Big Cabin has been organized at Big Cabin, I. T., with \$25,000 capital. The directors are Bird Ballinger, president; W. J. Gambill, vice-president; J. W. Orr, L. S. Robinson, C. S. McCombs, R. L. Madison and J. W. Harris.

The Bankers and Traders' Building and Loan Association has been incorporated at Baltimore, Md., with \$250,000 capital by Tanchum Silberman, Solomon Todes, Solomon Blaustein, Abraham Landy, Benjamin Brenner and Louis H. Levin.

The Farmers and Merchants' National Bank of Alvord, Texas, capital \$30,000, has organized with the following officers: T. B. Yarbrough, president; Terrell Collins, vice-president; W. J. Leach, second vice-president; A. Y. Leslie, cashier.

The Empire Life Insurance Co. of Atlanta, Ga., has made application for a charter; capital \$100,000. The organizers are William W. Reid, S. C. Callaway, C. A. Langford, Thomas M. Callaway and Samuel Barnett, all of Fulton county.

The Goldsboro Building and Loan Association, capital \$50,000, has been organized at Goldsboro, N. C., with the following officers: President, Geo. C. Royall; vice-president, Geo. A. Norwood, Jr.; secretary and treasurer, Graves K. Smith.

The Lincoln County Bank, capital \$25,000, has been chartered at Hamlin, W. Va. The incorporators are W. A. Parsons of Ripley, W. Va.; Ira S. Bartlett, A. J. Knotts, D. A. Summons, P. C. Adams and A. J. Lyons of Spencer, W. Va.

The Cohutta Banking Co. has opened for business at Spring Place, Ga., with \$25,000 capital. The officers are M. C. Horton of Atlanta, president; C. N. King of Spring Place, vice-president, and E. N. Whitmire, formerly of South Carolina, cashier.

The Avenue Bank & Trust Co. has begun business at 232 East Montgomery avenue, Chattanooga, Tenn., with \$50,000 capital. The officers are Capt. C. A. Lysterly, president; J. F. Head, vice-president and cashier; A. L. Kirkpatrick, assistant cashier.

The First National Bank of Ranger, Texas, capital \$25,000, has been authorized to begin business with the following officers: William Bohning, president; G. H. Bohning, vice-president; W. S. Michael, cashier, and F. W. Melvin, assistant cashier.

The State Bank of El Campo at El Campo, Texas, capital \$20,000, has been incorporated by Mack Webb, B. W. Lude-man, Christian Bruni, C. B. Mendel, Geo. Ludeman, W. H. Bruns, N. Thompson, El Campo; W. L. Moody and E. W. Pratt of Galveston.

The Farmers and Merchants' Bank of Choteau, I. T., has been organized with \$25,000 capital, and business is expected to begin within 30 days. The incorporators are Clay Brown, A. F. Hennigh of Choteau and J. F. Cole and M. Miller of Marysville, Kan.

It is reported that the First National Bank is to be established at Stanton, Texas, the promoters being E. R. Bryan of Midland, Texas; J. T. Pemberton of Fort Worth, Texas; A. L. Houston, J. E. Millhollon, Mrs. Mollie Robertson, Paul Konz and others.

A new national bank with \$25,000 capital has been organized at Pleasanton, Texas, with the following directors: H. G. Martin, president; A. M. Avant, vice-president; J. K. Lawhon, cashier; Charles Peterson, W. S. Hall, Frank H. Burmeister and James A. Walton.

The Draketown Banking Co. at Drake-town, Ga., capital \$25,000, has been granted a charter. The incorporators are W. F. Goldin, B. F. Eaves, J. C. McBrayer, John R. Reeves, Frank L. Westbrook, B. T. McGarity and T. J. McLendon, all of Haralson county.

The Bank of Mansfield at Mansfield, Texas, capital \$25,000, has been granted a charter. The directors are J. T. Stephens, J. H. Wright, W. S. Poe, Joseph Edwards, W. B. McNight, Martin Ballweg, J. E. Guest, C. B. Pool, all of Mansfield, and N. Harding of Fort Worth.

The Cynthiana Bank of Cynthiana, Ky., capital \$25,000, has filed articles of incorporation. The directors are F. G. Sprake, president; W. M. Goodwin, vice-president; Gano Ammerman, cashier; W. L. Northcutt and J. R. Northcutt, W. T. Hamon, F. G. Jenkins, J. S. Linehan, Edgar Gragg.

The Southern States Mutual Life Insurance Co., recently incorporated at Charleston, with principal office at Charleston, W. Va., has elected the following officers: Harrison B. Smith, president; Dr. A. G. Smith of Brooklyn, N. Y., vice-president and general manager; J. D. Baines, treasurer.

A new national bank has been organized at Dublin, Ga., to take over the Citizens' Bank, the capital of which is to be increased from \$25,000 to \$50,000. Charter has been applied for, and it is said J. E. Smith, Jr., Albert R. Arnau and D. S. Blackshear, cashier of the Citizens' Bank, will be the officers.

The Commercial and Savings Bank of Hopkinsville, Ky., has begun business in the Phoenix Building with the following directors: President, James West; vice-president, W. T. Cooper; cashier, Gus T. Brannon; Dr. Milton Board, George Dalton, T. J. Tate, G. W. Wiley, P. E. West and J. T. Hanberg.

The Bank of Cane Hill has been organized at Cane Hill, Ark., with \$20,000 capital. The officers are A. R. Carroll, president; John S. Edmiston, vice-president; directors, W. S. Moore, A. R. Carroll, B.

Brewster, J. S. Edmiston, W. H. Buchanan, J. A. Miller of Cane Hill and I. C. Adair of Kentucky.

The Bank of Castleberry of Castleberry, Ala., capital \$50,000, has been incorporated by L. H. Downing, E. Downing, Jr., R. T. Holland, C. V. Stubbs, E. C. Lee, D. F. Parker, H. H. Lovelace, E. N. Partin, A. McGowin, Jr., W. H. Hancock, J. P. Baggett, J. D. Beard, S. Castleberry and D. H. Lee.

The Almo Savings Bank of Muskogee, I. T., has been chartered with \$25,000 capital. The directors are A. P. McKellop, president; Walter Howard, vice-president; John H. Dill, treasurer; Thos. H. Owen, secretary; R. E. Cook, Henry Vogel, Wm. B. Moore, J. A. Todd, D. H. Middleton, Ben H. Kaufman and W. T. Shervey.

The Bank of Morgantown at Morgantown, W. Va., has been incorporated with \$25,000 capital by Thomas E. Hodges, Frank Cox, William E. Glasscock, John Shriver, H. L. Carspecken, George C. Baker, John M. Gregg, J. M. Glasson, L. L. Jamison, S. F. Glasscock, A. G. Baker, C. C. Core and Frank L. Bowman, all of Morgantown.

The Merchants' National Bank of Galveston, Texas, recently approved, has elected the following officers: M. O. Kopperl, president; J. R. Check, vice-president; N. O. Laure, cashier; directors, V. E. Austin, J. R. Check, A. B. Wood, Fred Harter, E. A. Toebelman, W. B. Kinkade and Moritz O. Kopperl. The bank will also conduct a savings department.

The Lexington Banking & Trust Co. of Lexington, Ky., which is a consolidation of the Central and National Exchange banks, has begun business with \$600,000 capital. The officers are J. L. Barkley, president; Ben T. Head, vice-president; W. C. Smith, vice-president; C. D. Chennault, cashier, and C. Yancey Freeman, assistant cashier and paying teller.

The Maddox-Rucker Banking Co. of Atlanta, Ga., has elected the following officers: R. F. Maddox, president; Chas. A. Conklin, vice-president; S. B. Turman, treasurer, and James L. Logan, secretary; directors, R. F. Maddox, C. A. Conklin, S. B. Turman, Clifford L. Anderson, Dr. Thomas P. Hinman, Dr. Charles F. Benson, H. W. B. Glover, A. P. Stewart and Frank Edmondson.

The Exchange Bank of Savannah, Ga., is to begin business March 1 with the following officers: President, W. W. Osborne; vice-president, A. J. Garfunkel; cashier, John J. Powers; directors, Sigo Myers, Chas. F. Fulton, J. W. Seay, John F. Canty, M. J. O'Leary, B. Weitz, Jas. M. Dixon, Frank S. Van Giesen, Solomon Sheftall, A. L. Weil, Henry E. Dresson, W. W. Osborne and A. J. Garfunkel. It has been decided to increase the capital from \$100,000 to \$125,000.

The Roanoke Banking & Investment Co. of Roanoke, Va., is reported to have consolidated with the Columbia Trust Co., which was run in connection with the People's National Bank. The new organization will have \$100,000 capital, and the officers of the Columbia Trust Co. are L. H. Vaughn, president; James D. Johnston, vice-president; Charles M. Armes, secretary and treasurer; directors, L. H. Vaughn, A. R. Neal, H. C. Elliott, John A. Taylor, James D. Johnston, R. H. Angell, T. J. Burk, R. M. Bibb, A. E. King, George W. Payne, George MacBain, W. G. Baldwin, C. M. Armes, W. H. Carter, C. A. Moomaw, C. B. Moomaw.

New Securities.

Andrews, N. C.—The MANUFACTURERS' RECORD is informed that bids will be received by the board of trustees of Andrews school district, J. Q. Barker, chairman, until March 1 for \$5000 of 6 per cent. school bonds. These bonds were re-

cently reported sold, but the purchaser failed to comply with the terms of sale.

Atlanta, Ga.—The Miller Union Stock Yards Co. has filed a mortgage to secure an issue of \$200,000 of 6 per cent. 10-year improvement and extension bonds. Jacob N. Patterson is president.

Birmingham, Ala.—It is reported the question of issuing \$100,000 of sewer, water and lighting-plant bonds for improving North Birmingham is being considered.

Burnet, Texas.—The city has voted in favor of issuing bridge bonds.

Chattanooga, Tenn.—The Chattanooga Iron & Coal Co., which will operate iron furnace, develop mineral lands, etc., has filed a mortgage with the Trust Company of America at New York city to secure an issue of \$600,000 of bonds. C. E. Buek is president.

Chickasha, I. T.—The \$60,000 of water-works and sewer extension bonds have been purchased by F. R. Fulton & Co. of Chicago at 105 net.

Chillicothe, Mo.—The city has voted to issue \$100,000 of water and light bonds.

Cleveland, Texas.—The Liberty county school fund is reported to have purchased at par the \$3000 of 6 per cent. independent school district bonds.

Comer, Ga.—A Mr. Hemphill of Atlanta is reported to have purchased at a premium the \$8000 of 5 per cent. school-building bonds.

Fort Worth, Texas.—The comptroller has registered \$8000 of courthouse and \$2000 of bridge bonds of Tarrant county.

Fayette, Mo.—No satisfactory offers were received January 29 for the \$40,000 of 4 per cent. water-works bonds, and bids for same at 4½ per cent. will again be received until February 12. Willard Smith is city clerk.

Hemphill, Texas.—It is reported that Sabine county proposes to issue \$30,000 of courthouse bonds.

Nevada, Mo.—A special election is to be held to vote on the question of issuing \$50,000 of high-school bonds.

Nevada, Mo.—Vernon county is reported to have voted \$75,000 for courthouse.

Perry, Fla.—The city has voted to issue \$25,000 of water-works bonds.

Richmond, Va.—The Bank of Richmond has purchased at 103½ \$50,000 of 5 per cent. 30-year bonds.

Roanoke, Va.—Brown Bros. & Co. of Norfolk have purchased \$3,000,000 of 4 per cent. first lien and general mortgage bonds and \$3,000,000 of equipment trust certificates issued by the Norfolk & Western Railway.

Tyler, Texas.—The \$14,000 of 4 per cent. Smith county jail bonds are reported to have been purchased by the State Board of Education.

Tulsa, I. T.—A special election is to be held February 26 to vote on the question of issuing \$70,000 of school and sewer bonds.

Vienna, Ga.—The mayor has been authorized to call an election to decide the question of issuing \$35,000 of bonds.

Washington (P. O. St. Marys), W. Va. Bids will be received by D. W. Dillon, secretary board of education, until March 1 for \$7000 of 6 per cent. school-building bonds.

The Chicago, Rock Island & Pacific Railway Co. is offering for sale \$11,784,000 of first refunding mortgage 4 per cent. bonds. Copies of the mortgage securing the bonds may be had by addressing Speyer & Co., 24-26 Pine street, New York. The Maryland Trust Co. of Baltimore is also authorized by Speyer & Co. to receive subscriptions for the above bonds. Further information will be found in the advertising columns.

Financial Notes.

The Benton County Bank of Bentonville, Ark., has decided to increase its capital to \$60,000.

It is reported the Louisiana State Bankers' Association will be held in Lake Charles, La., April 18 and 19.

The Citizens' National Bank of Pine Bluff, Ark., is reported to have increased its capital from \$100,000 to \$300,000.

The meeting of the Virginia Bankers' Association is to be held June 21, 22 and 23, but the place has not been chosen.

The People's National Bank and the National Exchange Bank, both of Roanoke, Va., are reported to have consolidated.

The Bank of Hazlehurst at Hazlehurst, Miss., has decided to increase its capital to \$100,000. G. W. Covington is president.

Winchester, Va., is reported to have canceled \$12,000 of 4 per cent. redemption bonds of the \$30,000 issued January 1, 1905.

The Bainbridge State Bank at Bainbridge, Ga., has amended its charter, increasing its capital from \$50,000 to \$100,000.

The People's Savings Bank of Meridian, Miss., has decided to increase its capital from \$25,000 to \$50,000. George W. Meyer is president.

A meeting of stockholders of the Realty Title & Trust Co. of Jacksonville, Fla., will be held March 1 to decide the question of increasing the capital from \$50,000 to \$100,000. Carroll D. Judson is secretary.

In addition to regular semiannual dividends of 2 per cent. on the preferred stock and 2½ per cent. on the common stock, directors of the Baltimore & Ohio Railroad declared a dividend of 6 per cent. on the stock of the Washington Branch, the first of the kind in nearly 10 years.

Bank clearings at Atlanta in January aggregated \$22,020,815, an increase of \$8,000,000 over the same month in 1905. At Columbus, Ga., there was an increase of more than \$600,000 in clearings, and at New Orleans, where the clearings amounted to \$108,300,243, the increase was more than \$11,000,000—a few indications of the pace which Southern financial institutions are keeping with those of the rest of the country.

The Central Bank and Trust Corporation of Atlanta, Ga., began business this week in the Candler Building. The banking rooms have been fitted up handsomely, and with every convenience for the business. The institution has a capital of \$500,000, fully paid in, and its officers are Messrs. Asa G. Candler, president; A. P. Coles, cashier, and I. Y. Sage, John N. Goddard, J. P. Williams, Sam D. Jones, John S. Owens, Asa G. Candler, F. B. Dancy, E. R. Black, Norman Miller, Dr. J. S. Todd, George E. King, I. H. Hirsch, W. H. Patterson, W. M. Nixon, Charles G. Goodrich, trustees.

Industrial Development—Communities on the Chicago & Northwestern Railway to Be Benefited.

An industrial bureau has been established by the Chicago & Northwestern Railway, the purpose of which shall be to furnish reliable information regarding the many desirable locations along the Northwestern line for new manufacturing enterprises.

The rapidly-growing cities and the splendid resources of the territory reached by the Northwestern line combine many of the essentials to industrial success. Fine water-power locations that may be supplemented by electrical energy developed therefrom, vast forests of hard and soft timber for all kinds of woodworking concerns, mineral wealth that provides the material for foundry and machine work, coal fields close at hand and an excellent supply of a good class of labor are all found here.

This feature should prove of much ben-

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efit not only to the railway company, but also to the communities along the line, and such of them as have commercial organizations will find ready co-operation by this department.

It will also prove a time-saving convenience to manufacturers seeking new locations or desiring to establish branch establishments, to whom information will be promptly furnished upon application, advt.

